

MACWORLD

THE MACINTOSH® MAGAZINE

February 1992 \$3.95 Canada \$4.95

Page Layout

CHOOSING THE RIGHT PROGRAM FOR YOU

#BXBGGBPP*****5-DIGIT 95148 0C
#GER3619N090 6#303196
AUG 92
CC1A
#YJ02
RICHARD GOERGES
DUPONT ELECTRONICS
3619 NORTREE ST
SAN JOSE CA 95148-2214

Framemaker
The professional typesetting and publishing solution

PageMaker

MW LAB Tests
Top 5 in E-Mail

3-D CAD: 14 Programs Reviewed
ISDN: Digital Data on Demand
Utilities that Make DTP Easier
QuickTime Tools for You
System 7: Insights on 7.0

1991: A Look Back

MW LAB Tests

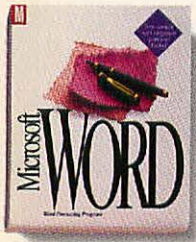
44 Hard Drives: 120MB—
220MB



WE LISTENED TO THOUSANDS OF
MAC® USERS, LIKE GUNNAR, TODD AND CHARLYN.
YOU CAN TAKE OUR WORD FOR IT.

*OFFER GOOD FOR CURRENT LICENSEES OF MICROSOFT WORD FOR APPLE® MACINTOSH® VERSION 4.0 OR EARLIER. USERS WILL NEED TO PROVIDE A MAC WORD DISK OR MANUAL COVER AS PROOF OF OWNERSHIP. PLEASE ALLOW 2-4 WEEKS FOR DELIVERY UPON RECEIPT OF ORDER BY MICROSOFT. OFFER EXPIRES 6/30/92. LIMIT ONE PER CUSTOMER. RESELLER PRICES MAY VARY. OFFER GOOD ONLY

Introducing new Microsoft Word. Of the people. By the people. And for the people.



NEW WORD 5.0

When it came to designing new Microsoft® Word 5.0, we listened to you. After all, you know what you want.

And you told us. In your letters. Your faxes. Your post cards. To sum things up: you want a Word that will make doing your everyday work even easier.

So we came up with the Ribbon—think of it as easy access to powerful features. With it you can create columns, access fonts, change the format and use



EASY ACCESS TO FEATURES YOU USE EVERY DAY.

Word's new drawing

tool. All with a single mouse click. You'll even be able to move text with a drag and drop. Then there's our kinder, gentler print merge. It reduces a complicated process down to a few simple steps.

We are also introducing word processing's first built-in grammar checker. A find file feature that can locate documents based on dates, keywords or the author. An auto-save reminder. And lots of other useful additions, like full System 7.0 support and Publish and Subscribe. Mac Word users can upgrade for \$129*. So see your nearest reseller, or call (800) 645-WORD, Department X04. Call soon. We can't wait to hear from you.

Microsoft®

Contents

MACWORLD THE MACINTOSH® MAGAZINE FEBRUARY 1992

FEATURES

Desktop Publishing Diversifies.....208

BY JIM HEID In page layout, one size—or DTP program—no longer fits all. We rate the top products for beginners, experts, and long-document specialists.

Enhancing Page Layout.....214

BY JIM HEID Plug-in modules and utilities are fast filling the gaps in the leading desktop publishing programs. Find out how DTP add-ons work and just how well they enhance your publishing productivity.

Seeking Midrange Hard Drives.....218

BY BRUCE F. WEBSTER Looking for a hard drive in the 120MB-to-220MB range? Macworld Lab tests 44 models and finds some standouts in the crowd.

Digital Data on Demand.....224

BY LON POOLE The analog modem may soon become a dusty relic—thanks to lightning-speed, error-free digital phone lines that promise to revolutionize the way we send and receive electronic data.

Year in Review.....228

BY JERRY BORRELL Once again, it's time for our annual look back at the past year's most memorable events in the life of the Macintosh.

Opening Up E-Mail.....234

BY DAVE KOSIUR Macworld Lab takes five major electronic-mail packages for a spin to see how they rate on speed, versatility, and friendliness.

QuickTime Tools.....240

BY ERFERT FENTON Can a video-illiterate make digital movies on the Mac? With QuickTime—Apple's new time-based software architecture—and some video capture and editing tools, it's a breeze.

3-D: Structure, Surfaces, and Movement.....246

BY DAVID POOLE Building photo-realistic three-dimensional images and animations on the Mac is still a meticulous process, but the current crop of modeling and rendering programs can bring an artist's dreams much closer to reality.



On the Cover

AS FEATURE-LADEN
DTP PROGRAMS AND
ADD-ONS PROLIFERATE,
CHOOSING
THE RIGHT PACKAGE IS
HARDER THAN
EVER. OUR FEATURES
ON PAGES 208 AND
214 HELP YOU DECIDE.
(PHOTO BY
PAUL FRANZ-MOORE.)

Page 218



REVIEWS

- 256 **OneScanner**
Flatbed gray-scale scanner.
- 257 **LaserScript LX**
Laser printer.
- 258 **Macintosh PowerBook 170**
Notebook computer.
- 262 **MarketPlace Business**
Direct-marketing database.
- 264 **Mariah 1.06, Multi-Ad Search 1.0, PictureBook+ 1.0**
Graphics cataloging programs.
- 266 **Fractal Design Painter 1.0**
Color paint program.
- 273 **Hard Disk Toolkit 1.0**
Hard drive utility package.
- 273 **Help 1.0**
System diagnostics tool.
- 274 **DynDex 2.0.4**
Address book database.
- 274 **Address Book Plus 2.0**
Address book database.
- 277 **Acta 7**
Outliner.
- 277 **Azimuth 2.0**
Map-drawing program.
- 278 **Earthquest Explores Ecology**
Ecology educational stacks.
- 278 **Glider 4.0**
Arcade game.
- 280 **PageBrush Color for the Mac**
Color hand scanner.
- 280 **Verbum Interactive 1.0**
Interactive magazine.

- 282 **Aqua Blooper Piper**
Arcade game.
- 282 **3 in Three**
Interactive game.
- 284 **Backmatic 2.01**
Backup utility.
- 284 **JMP 2.0**
Statistical-analysis program.
- 287 **Michelagnolo: Self-Portrait**
Interactive videodisc.
- 287 **Instant Update 1.0**
Groupware.
- 289 **Now Utilities 3.0.1**
Utility collection.
- 289 **CheckList 2.0**
PageMaker and PostScript file scanner.
- 291 **OutNumbered 1.0**
Educational game.
- 291 **EPS Exchange 1.01**
Format-translation utility.



Page 246

Page 191



Page 187



Page 197



DEPARTMENTS

- 12 **How to Contact Macworld**
- 17 **MacBulletin**
- 21 **Commentary/ Jerry Borrell**
In search of a universal file opener.
- 33 **Letters**
- 39 **Art Beat**
BY CATHY ABES
- 55 **The Iconoclast**
BY STEVEN LEVY
A visit to high-volume dealer Computer Era.
- 63 **Conspicuous Consumer**
BY DEBORAH BRANSCUM
The storage industry in turmoil.
- 69 **Updates**
- 77 **Lab Notes**
BY TIM WARNER
- 143 **Macworld 1991 Index**
- 185 **News**
BY DAN LITTMAN AND TOM MORAN
- 293 **The Desktop Critic**
BY DAVID POGUE
- 297 **New Products**
- 305 **HowTo/Quick Tips**
BY LON POOLE
- 323 **HowTo/Getting Started**
BY JIM HEID
Alternative Mass Storage
- 331 **HowTo/Insights**
BY LON POOLE
System 7
- 337 **Where to Buy**
- 414 **Profile**
BY DEBORAH BRANSCUM
Scientist Susan Solomon battles ozone depletion with her Mac.
- 416 **Best-Sellers**

MACWORLD

EDITOR-IN-CHIEF AND
EXECUTIVE VICE PRESIDENT

Jerry Borrell

EDITORIAL

EXECUTIVE EDITOR	Adrian Mello
EDITORIAL MANAGER	Jane Lages
SENIOR ASSOCIATE EDITOR/DEPARTMENTS	Deborah Branscum
SENIOR ASSOCIATE EDITOR/LAB MANAGER	Chip Carman
SENIOR ASSOCIATE EDITOR/REVIEWS	Carol Person
SENIOR ASSOCIATE EDITOR/FEATURES	Suzanne Stefanac
SENIOR ASSOCIATE EDITOR/FEATURES	Cheryl England
ASSOCIATE EDITOR/DEPARTMENTS	Cathy E. Abes
ASSOCIATE EDITOR/FEATURES	Galen Gruman
ASSOCIATE EDITOR/LAB	Mark Hurlow
ASSOCIATE EDITORS/NEWS	Dan Littman, Tom Moran
ASSOCIATE EDITOR/FEATURES	Charles Piller
ASSOCIATE EDITOR/FEATURES	Liza Weiman
ASSISTANT EDITOR/REVIEWS	Marjorie Baer
ASSISTANT EDITOR/NEW PRODUCTS	Evan Cooper
ASSISTANT EDITOR/LAB	Tim Warner
EDITORIAL ASSISTANTS	Carolyn Bickford, Suzanne Courteau, Danny Lee
EDITORIAL ADMINISTRATIVE ASSISTANTS	Wendy Sharp, Lyn Taylor
CONTRIBUTING EDITORS	Robert C. Eckhardt, Erfert Fenton, Rob Hahn, Jim Heid, Dave Kosiur, Steven Levy, Joe Matazzoni, Tom Negrino, David Pogue, Lon Poole, Steve Roth, Charles Seiter, Franklin N. Tessler, Bruce F. Webster
OVERSEAS EDITORS	Peter Worlock, Editor, Macworld (U.K. edition), tel. 01-831-9252; David Ushijima, Contributing Editor, Japan

COPY EDIT AND EDITORIAL PRODUCTION

MANAGING EDITOR	Charles Barrett
ASSISTANT MANAGING EDITORS	Luis A. Camus, Ruth Henrich
SENIOR COPY EDITOR	Katherine L. Ulrich
SENIOR PRODUCTION EDITOR	Jo Ann Villalobos
COPY EDITORS	Doreen J. Kan, Paul King, Felicity O'Meara
ASSISTANT PRODUCTION EDITOR	Lisa Braziele

ART AND DESIGN

DESIGN DIRECTOR	Dennis McLeod
ART DIRECTOR	Joanne Hoffman
SENIOR DESIGNER	Leslie Barton
SENIOR DESIGNER/INFORMATIONAL GRAPHICS	Arne Hurty
ASSOCIATE ART DIRECTOR	Sandra Koenig
ASSISTANT ART DIRECTOR	Kent Tayenaka
DESIGNER	Hae Yuen Kim
ASSOCIATE DESIGNER	Matthew C. Nielsen
SENIOR DESIGN ASSOCIATE	Tim Johnson
DESIGN ASSOCIATE	Martha Katt

EVENTS AND CONFERENCES

EVENTS MANAGER	Sandy Butler
EVENTS ADMINISTRATIVE ASSISTANT	Donna Deuell

PRESIDENT/CEO AND PUBLISHER, MACWORLD COMMUNICATIONS, INC.	James E. Martin
ASSISTANT TO THE PRESIDENT	Terri Edelman

FOUNDER	David Bunnell
FOUNDING EDITOR	Andrew Fluegelman 1943-1985

Visit us!
at MACWORLD
Expo Booth
#2046.

Print it, fold it, pocket it, and go.

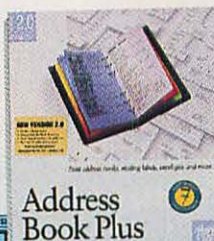
Address Book Plus 2.0 makes the ordinary extraordinary.

Address Book Plus 2.0™ gives you all the tools you need to easily organize and print addresses and phone numbers in a variety of formats. That's ordinary.

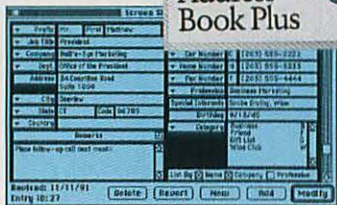
What's extraordinary are the details that set Address Book Plus 2.0 far apart from the competition. Like the compact and convenient InstaBook™, pictured above. And over 175 layouts – simply select the format that matches your favorite personal organizer, labels, rotary-file cards and envelopes (Day-Timer, Avery, Rolodex and more). A unique "list by" function lets you print each entry by name, company and/or profession.

The power is in the extra details.

No other address manager gives you so much flexibility. Assign up to 45 categories to each name, such as business contacts, holiday card recipients and club members, then easily mark and print just the categories you want. Powerful import/export capabilities let you import an existing list, no matter what format it's in, then export to any word processor with mail-merge. Or combine with Power Up's Letter Writer Plus™ for the fastest, easiest mail-merge ever.



Address Book Plus



Includes fields that other programs forget: full name (prefix and suffix), department, 2 date fields, profession, and up to 45 categories per entry.

extraordinary features at a very ordinary price – \$99.95 (sugg. retail). And for extra efficiency, the Address Book Plus/Letter Writer Plus bundle is just \$149.95.

Get Address Book Plus from your favorite software reseller today, or call:

1-800-851-2917
Ext. M510
(8 a.m. to 5 p.m. PST)



Special Offer: Write "I know what makes Address Book Plus extraordinary" on your registration card to receive a free Address Book Plus T-Shirt. Offer good only in the U.S. Offer expires 5/31/92.

Dial any number using your Mac speaker or any Hayes-compatible modem – Address Book Plus even dials your credit card number!

System requirements: System 6.0 or 7.0 and above, Macintosh Plus or Classic and above. To upgrade from Address Book Plus 1.0 send your 1.0 disk and \$29.95 (includes \$4.95 for shipping & handling) to the address above. After Address Book Plus (Mac) Upgrade Offer. Residents of the following states please add applicable sales tax: AZ, CA, CO, CT, FL, GA, MA, MD, MI, MN, NY, OH, PA, TX, VA, IL, IN, OH, WA (7.5%). Also available from Power Up, Calendar Creator, Fast Forward, Address Book Plus, InstaBook and Letter Writer Plus are trademarks and Power Up! is a registered trademark of Power Up Software Corporation, P.O. Box 7550, San Mateo, CA 94403-7500.

Circle 87 on reader service card.

REBATES
NOW!

JUST RIGHT

OFFICE AUTOMATION



BUSINESS PRODUCTIVITY



DESKTOP PUBLISHING



COMPUTER-AIDED DESIGN



16-INCH DISPLAYS FOR THE MAC QUADRA... JUST RIGHT FOR THE ENTIRE OFFICE

Introducing the only 16-inch displays compatible with the new Macintosh Quadra 700 and 900, E-Machines ColorPage E16 and ColorPage T16. 🍏 Just plug-n-play for affordable full-page color

HIGH PERFORMANCE INTERFACE CARDS

DOUBLE COLOR 8-BIT UP TO 832 x 624

FUTURA EX 24-BIT UP TO 640 x 480

FUTURA SX 24-BIT UP TO 832 x 624

FUTURA MX 24-BIT UP TO 1024 x 768

up to 24-bits. No interface card necessary! Need more room to work with large spreadsheets, desktop publishing layouts or multimedia applications? E-Machines 16-inch color solutions are just right for the Mac IIfx, IIfx, LC — The Entire Office.

🍏 Add an E-Machines Futura interface card

and turn your Mac into a high performance,

accelerated color machine complete with pan and zoom, virtual screens and video output capabilities. 🍏 Go ahead,

experience high performance color and see how affordable 16-inch color solutions have become.



ColorPage™ T16



E-MACHINES
E-Magination at work™

For your nearest dealer, call or write.
9305 SW Gemini Drive, Beaverton, OR 97005
Fax: 503-641-0946

1-800-344-7274

Circle 303 on reader service card

Only one spreadsheet and all Macintosh. R

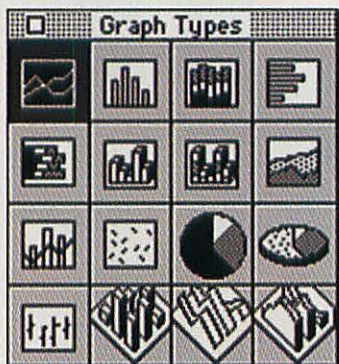
One look and Apple Chairman and CEO John Sculley called it "a spectacular product."* And that's just for starters.

This isn't just another version of Lotus® 1-2-3®; it's a spreadsheet that really grabs hold of the full computing power of Macintosh®. So, everything you've come to love about Mac® computing is now available in 1-2-3.

A full-fledged, no-holds-barred Mac spreadsheet

Because it was designed and built just for Macintosh, Mac users will feel right at home with the menus, tools and the entire working environment of 1-2-3 for Macintosh. It includes features that push the capabilities of System 7 and everything that comes with it to the limit. Like Publish and Subscribe, Apple Events and Data Access Manager, to name a few.

Its innovative "user interface" makes working with data, text and graphics not only fast and easy, but fun. Like In-Cell Editing, which lets you double click on a cell and then type and edit directly in it. Or the Unified Work Environment, which allows you to




1-2-3 delivers the graphing capability Macintosh was made for. Select from hundreds of variations with a palette full of 3-D, pie, bar, area and scatter graphs, then directly manipulate and customize your graphs.

Be manipulative—Command your worksheet with direct manipulation and formatting of all data, graphs, drawn objects and scanned images.

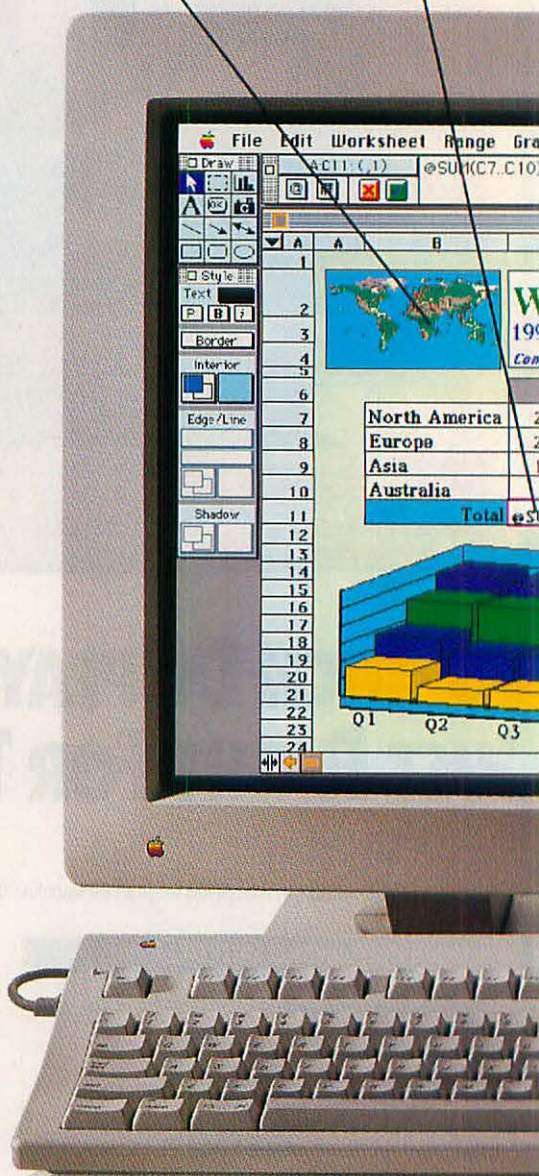
In-cell vs. Excel—Enter data or formulas directly into a cell, bypassing the console if you choose. Sounds simple because it is.

aaaaaaa

Output That Stands Out—Bring your presentations and reports to life with an array of colors, borders, Adobe® type styles, and images. 

manipulate data, text and graphics all in the same file with one set of menus. Change the color of your data the same way you change the color of your graphics. And directly manipulate data, graphs and drawn objects.

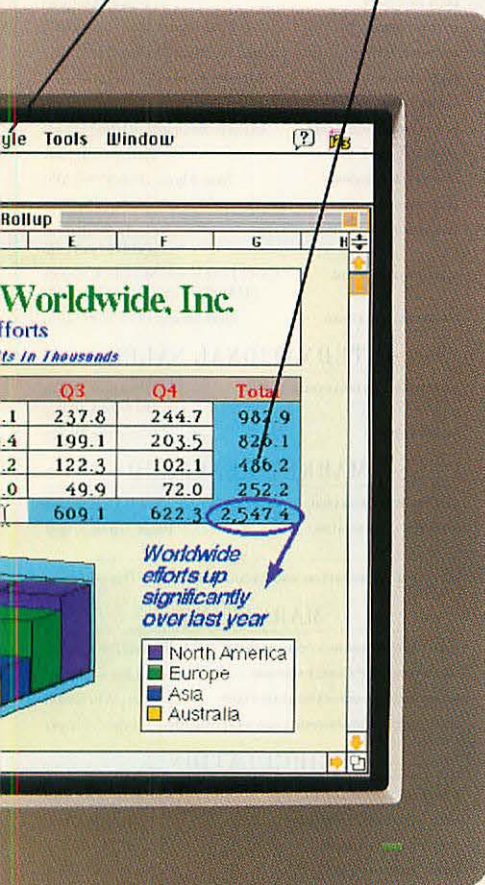
1-2-3 for Macintosh delivers the graphing capabilities Macintosh was made for in a way that's incredibly flexible. You get superior publishing and graphing functions including a rich variety



Sheet is all 1-2-3 right down to the core.

Unified Work Environment—the menu never changes and all information resides in one file—change colors, fill patterns and fonts the same way for data and graphs.

Publish and Subscribe—1-2-3 for Macintosh takes full advantage of all System 7 features. Change your data and that data will be automatically updated across your network.



of fonts and color choices. And with print preview, you see exactly what your output will look like, instantly, so you avoid surprises at the printer.

True 1-2-3 Compatibility

1-2-3 for Macintosh is compatible with other versions of 1-2-3, giving you direct access to the spreadsheet used by over 15 million people. It even reads and writes Microsoft® Excel files. So you can make the switch to 1-2-3 and never look back. And never look better.

It's one of your favorite System 7 features, so why shouldn't Balloon Help™ be part of 1-2-3? No matter where you are on the screen or what function you're in, detailed instructions are just a click away.

Nothing delivers on the capabilities of Macintosh like 1-2-3. Maybe that's why the world's best selling spreadsheet is the world's best choice for Macintosh.

1-2-3 Classic									
A:1:	Worksheet	Range	Copy	Move	File	Print	Graph	Data	System
Global	Insert	Delete	Column	Erase	Titles	Window	Status	Page	Hide

Press the slash key and the 1-2-3 Classic® menu appears on your screen. If you're coming from the DOS environment, this will make it easier for you to access familiar Lotus commands and run macros already written for 1-2-3.

Now what are you waiting for?

But don't take our word for it. See 1-2-3 for Macintosh for yourself. Lotus is offering a no-risk proposition for 1-2-3 for Macintosh. Just buy a copy from your favorite dealer and try it for 60 days with a full money-back guarantee direct from Lotus (Excel users can even upgrade at a special price). Or, call us today for a free demo video at **1-800-TRADEUP, ext. 6433.**



Lotus

Introducing 1-2-3 for Macintosh

Kiwi POWER WINDOWS Takes System 7 Beyond Aliases

Document management is almost a sideline for Kiwi POWER WINDOWS, the first comprehensive window management system ever offered for the Macintosh. Yet, its Work Set feature is simply better than any other.

Kiwi POWER WINDOWS was designed first and foremost as a window management system for the Macintosh. With dozens of intelligent Window Layouts, Kiwi POWER WINDOWS is the ultimate solution to keeping windows organized on your desktop, and puts an end to the window shuffling hassle.

But the creators of Kiwi POWER WINDOWS did not stop there. Building on the considerable advantage of Kiwi POWER WINDOWS' window management system, they created true *Work Sets*—collections of document or Finder windows which you can recall with a single command. Opening a Work Set re-creates a work environment exactly as you left it, replacing all windows in the same position, even on multiple monitor set-ups. All other utilities must be content with opening the folders and documents, and letting their windows fall where they may.

We compared the document and folder management abilities of the Alias feature of System 7, Microseed's HAM, CE Software's Tiles, and Kiwi POWER WINDOWS. Some of the less obvious differences are of importance. For instance, we realized that only Kiwi POWER WINDOWS was designed to handle difficult special case situations that will confuse HAM, such as when two windows have the same title (HAM simply forgets about one of them). We were also surprised to find out that Tiles used up 512K of RAM and took four times as long to open 15 Word documents than Kiwi POWER WINDOWS.

Compare for yourself and discover the superior capabilities of Kiwi POWER WINDOWS!

Features Comparison Kiwi POWER WINDOWS Work Sets vs. HAMlets vs. Project Tiles vs. Aliases

	KPW	HAM	Tiles	Alias
Opens multiple items with one command	●	●	●	
Opens items in user-defined order	●		●	†
Opens folder windows	●	●		●
Opens disk windows	●			●
Restores View mode in Finder	●			
Restores window position	●			
Restores window size	●			
Always accessible	●	*		††
Takes snapshot of open documents	●	●		
Can reside and be launched from anywhere on your disk	●	●		●
Works with removable media	●		●	●
Allows user to customize icons	**	**	●	**
Works with System 6			●	

† The user specifies the order in which aliases are opened.

* HAMlets are always accessible from the apple menu, but saving requires opening the HAM control panel.

†† Aliases can be placed in the Apple Menu Items folder for access within applications.

** Under System 7, any Finder icon can be customized through the "Get Info" dialog box.

All tests were conducted on a Mac IIci, using ver. 1.0 of all products.

Kiwi POWER WINDOWS

Full 60-day money-back guarantee
Suggested Retail Price: \$79.95

For more information, or to order, call
1-800-321-5494
Every 50th caller gets a free copy!

One call per customer, valid until 2/28/92

"I've waited a long time for a product that does what Kiwi POWER WINDOWS does. It's HOT!"
Bob Le Vitus, Author of Dr. Macintosh

"I think my System 7 experience will be better due to KPW. I love this product!"
Phil Leahy, Computer Consultant (PELCO)

© 1992 Kiwi Software, Inc. 6546 Pandall Road, Santa Barbara, CA 93117. Mac and Macintosh are registered trademarks of Apple Computer, Inc. Kiwi is a trademark of Kiwi Software, Inc. Tiles is a trademark of CE Software, Inc. HAM is a trademark of Microseeds Publishing, Inc.

Circle 33 on reader service card.

MACWORLD

ADVERTISING SALES

VICE PRESIDENT/DIRECTOR OF ADVERTISING SALES	Patricia Navone (415/243-0505)
ASSISTANT TO THE VICE PRESIDENT/DIRECTOR OF ADVERTISING SALES	Yuen Yeh (415/978-3258)
ASSOCIATE ADVERTISING DIRECTOR	William P. Peck (415/243-0505)
NO. CALIFORNIA (SAN JOSE, SOUTH)	Cherie La France (415/243-0505)
SALES ASSOCIATE	Shannon Smith
NO. CALIFORNIA (WEST BAY), WASHINGTON, WYOMING, WESTERN CANADA	Regina T. Salices (415/978-3155)
SALES ASSOCIATE	Edward Ramirez
NO. CALIFORNIA (EAST BAY, MARIN), IDAHO, MONTANA, OREGON	Suzanne Young Saluti (415/978-3262)
SALES ASSOCIATE	Jill Nightingale
SOUTHWEST/MIDWEST ADVERTISING MANAGER	Shannon Dolan (415/243-0505)
MIDWEST	Lisa Ladle (708/827-4477)
SALES ASSOCIATE	Stacey Holman
SO. CALIFORNIA	Paul Dudas (714/250-1307)
SOUTHWEST, TEXAS	Cathi T. Bledsoe (714/250-1307)
SALES ASSOCIATE	Marsha Bowers (714/250-1307)
EASTERN ADVERTISING MANAGER	Bill Thompson (201/967-1350)
MID-ATLANTIC/SOUTHEAST	Annette Bremer (201/967-1350)
SALES ASSOCIATE	Cathy Langhaar
NEW ENGLAND/FLORIDA	Joan Flynn (508/879-0700)
SALES ASSOCIATE	Susan Cardoza
MANAGER OF TELEMARKETING SALES	Beverly Schneider (415/978-3138)
MACWORLD CATALOG	Carol Johnstone, Wendi A. Smith (415/978-3152, 415/978-3117)
MACWORLD BILLBOARD	Niki Stranz (415/978-3105)

INTERNATIONAL SALES

DIRECTOR OF INTERNATIONAL SALES	Shannon Dolan (415/243-0505)
SALES ASSOCIATE	Christine Wong

MARKET RESEARCH

VICE PRESIDENT/RESEARCH	Gary L. Rocchio
RESEARCH COORDINATOR	Peter Summersgill

VICE PRESIDENT/MARKETING AND CIRCULATION	Daniel Orum
--	-------------

MARKETING

MARKETING COMMUNICATIONS MANAGER	Kimberlee Luedee
MARKETING EVENTS/MERCHANDISING	Lisa Espinoza
MARKETING COMMUNICATIONS ASSISTANT	Darien Werthorst
MARKETING ASSOCIATE/EVENTS AND MERCHANDISING	Jayne Salinger

CIRCULATION

DIRECTOR OF CIRCULATION	Lindsay Davidson
SINGLE-COPY SALES DIRECTOR	George Clark
SUBSCRIPTION MANAGER	Lori Hitchcock
SINGLE-COPY SALES REP	Martin Garchar
SUBSCRIPTION ANALYST	Elizabeth Jensen
SUBSCRIPTION COORDINATOR	Susanna Camp

PRODUCTION

VICE PRESIDENT/DIRECTOR OF MANUFACTURING	Anne Foley
PRODUCTION MANAGER	Claudia Dawn Smukler
ADVERTISING BILLING COORDINATOR	So Fong Yip
ADVERTISING TRAFFIC COORDINATOR	Arlette Crosland

ADMINISTRATION

DIRECTOR OF FINANCE	Vicki Peilen
CORPORATE BUSINESS MANAGER	Christina W. Spence
ACCOUNTING/OPERATIONS MANAGER	Pat Murphy
DIRECTOR OF HUMAN RESOURCES	Shelly Ginenthal
DIRECTOR OF INFORMATION SYSTEMS	Walter J. Clegg
ACCOUNTING/FACILITIES MANAGER	Michelle Reyes
FINANCIAL ANALYST	Madeleine Buckingham

WHEN WAS THE LAST TIME A DRAWING PROGRAM MADE YOUR PALMS SWEAT, YOUR PULSE RACE, AND YOUR HEAD SPIN.

UNLEASH THE AWESOME POWER OF CANVAS 3.

Fasten your seat belt and get ready to take the incredible new Canvas 3.0 for a spin. Its exceptional performance and nimble handling make Canvas 3.0 the hottest precision drawing program on the market. And its formidable list of major enhancements puts it miles ahead of anything else on the road.

CRUISE INTO THE FUTURE TODAY. Canvas 3.0 is System 7 Savvy with all of the features Apple® wants to see in System 7 graphics applications. Publish & Subscribe, Balloon Help™, AppleEvents™, and 32-bit memory are fully supported. What's more, Canvas 3.0's breakthrough

Open Architecture technology lets you add new tools, effects and file translators with ease, at any time.

IT WILL LEAVE YOU SPEECHLESS. Canvas 3.0 offers a wide range of professional text

handling features. Fractional leading and kerning. Tab support within

text blocks (left, right, center, decimal). Subscript and superscript text. You can even bind text to any curve.

Wrap text around or encrust it within irregular shaped

objects. Fully justify and slant text margins.

Apply character by character font

scaling. And convert TrueType™

and PostScript® Type-1 fonts

into their Bézier curve outlines.

NOTHING HANDLES CURVES BETTER.

While other drawing programs

make you draw Bézier curves by

"connecting the dots", Canvas 3.0's

freehand tool lets you create any

curve by simply drawing it. And it

gives you unparalleled Bézier curve

editing power -- from multi-point

selection and editing to automatic

conversions, combinations, and blends.

You even get centerline auto

tracing of scanned images.

GO WHEREVER YOU WANT.

With enhanced color

capabilities, including a

built-in process (CMYK)

color separator, PANTONE®

color support, and automatic

gradient fills and blends, Canvas

3.0 is blowing the doors off the competi-

tion. But it doesn't top out there. You'll also find

technical features like custom hatching, parallel

lines and curves, and dashed lines, curves and

borders. Automatic dimension lines. And a Smart

Mouse™ drawing aide for precise alignments. What's

more, there are new built-in file translators for important multi-

platform formats like EPSF, TIFF, CGM, DXF™, IGES, and Illustrator®.

TAKE THE CHECKERED FLAG. Why drive some sedate sedan when you can

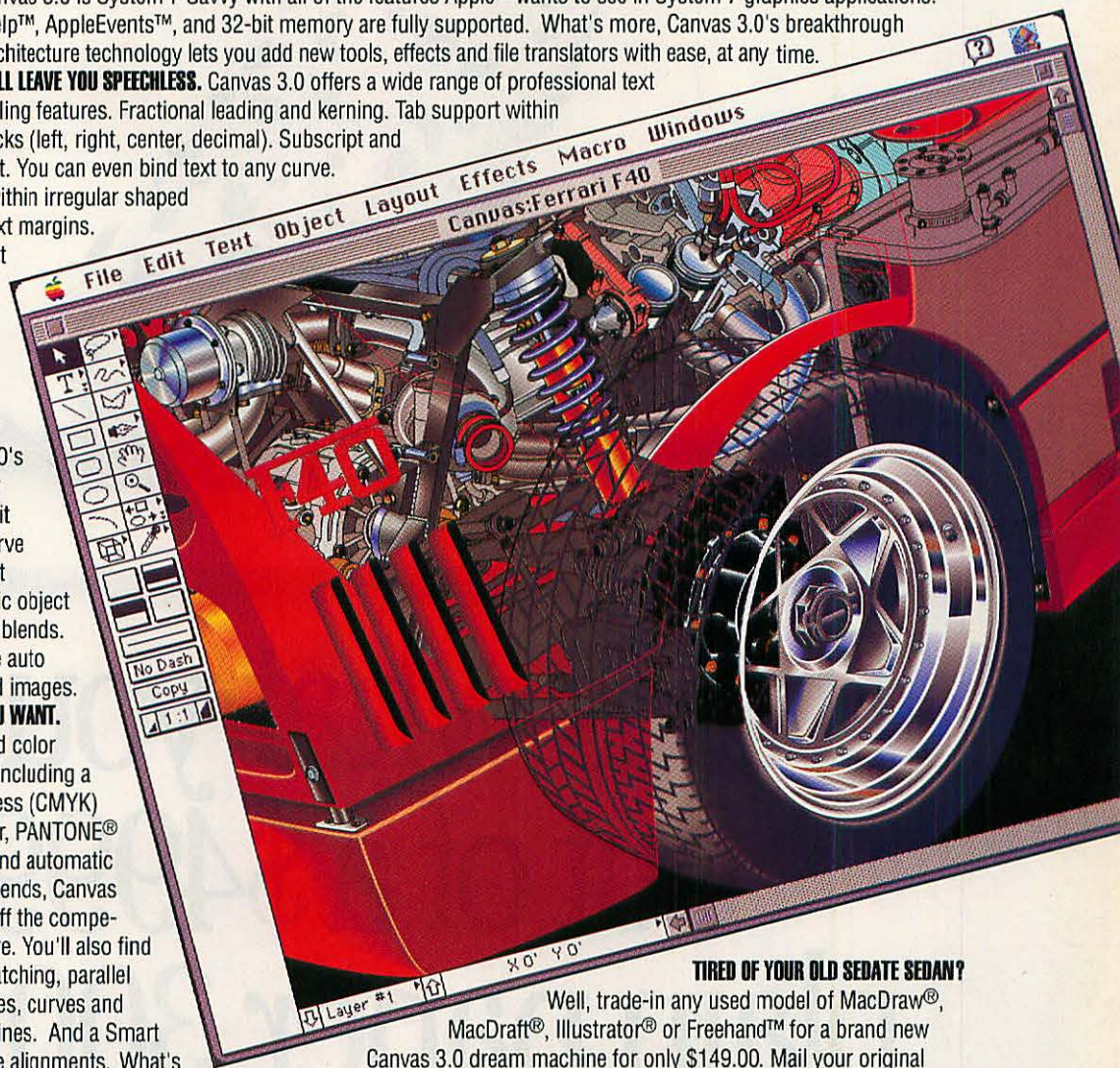
own the road with the new Canvas 3.0? It's incredibly easy to use --

and the list price of just \$399 simply adds to the thrill. So, take a deep

breath. Buckle up. Double click. And

unleash the awesome power of Canvas

3.0. You're in for the ride of your life.



TIRED OF YOUR OLD SEDATE SEDAN?

Well, trade-in any used model of MacDraw®, MacDraft®, Illustrator® or Freehand™ for a brand new Canvas 3.0 dream machine for only \$149.00. Mail your original program disk with payment to our main address below.

Include your MC, VISA or Amex card number, account name and expiration date, or a check in US

dollars drawn on a US bank. Add \$10.00

shipping. Offer valid in the United States and

Canada. Expires on

12/31/91. Please

allow four to six weeks for delivery.



CANVAS 3

PRECISION DRAWING POWER FROM **Deneba** SOFTWARE

See us at Macworld Expo
Booth# 229

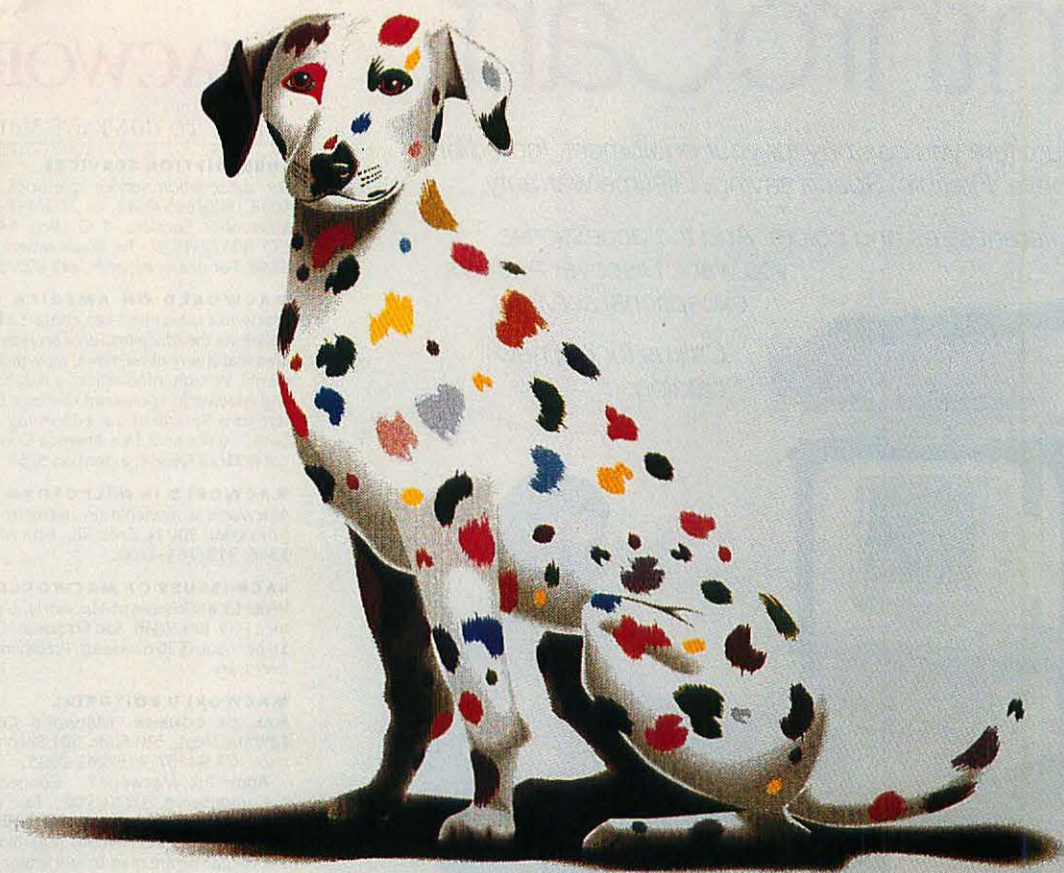
For more information or the name of your nearest dealer call (305) 594-6965 or Fax: (305) 477-5794. Deneba Software, 3305 Northwest 74th Avenue, Miami, Florida 33122.

©1991 Deneba Systems, Inc. Canvas™ and Smart Mouse™ are trademarks of Deneba Systems, Inc., MacDraw® is a registered trademark of Claris Corporation. TrueType™, Balloon Help™ and AppleEvents™ are trademarks of Apple Computer, Inc. PostScript® and Illustrator® are registered trademarks of Adobe Systems Incorporated. MacDraft® is a registered trademark of Innovative Data Design, Inc., Freehand™ is a trademark of Aldus Corporation, PANTONE® is a registered trademark of Pantone, Inc., DXF is a trademark of Autodesk Inc. The F-40 illustration was created and color separated using Canvas 3.0. We welcome environmentally sound ideas on what to do with tens of thousands of pre-owned master disks.

Circle 57 on reader service card



This is what you get
out of a \$4999,
plain paper, 300 dpi,
PostScript language
compatible printer.



Then again, so's this.

The choice is yours. You can stick with plain old black and white laser printing. Or you can pick the new Seiko Instruments Personal ColorPoint printer, and get rich laser-quality color documents.

You'll get sharp 300 dpi images on laser plain paper and transparencies. Speedy RISC processing. 100% PostScript language compatibility. And the ability to connect to Macintosh, PCs, and UNIX workstations simultaneously.

All for a monochrome price.

Which means switching to color is a black and white choice. So for your nearest Personal ColorPoint dealer, call 1-800-873-4561, department SI-M8.



Introducing the Personal ColorPoint printer.

SII 
Seiko Instruments

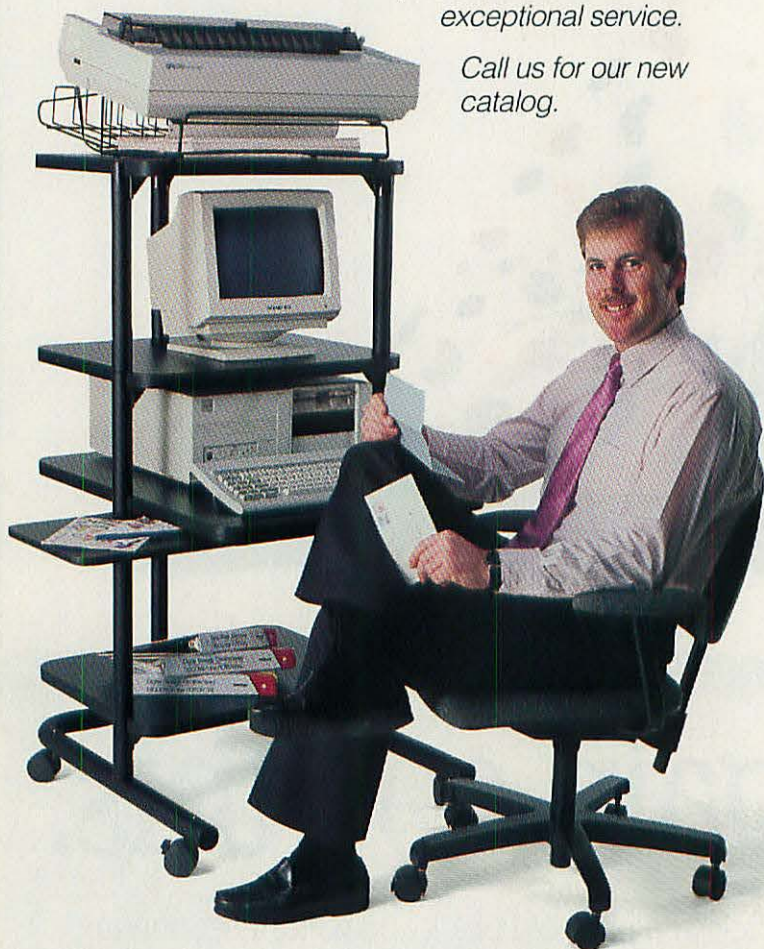
Personal ColorPoint is a trademark of Seiko Instruments USA Inc. PostScript is a registered trademark of Adobe Systems, Inc. Macintosh is a registered trademark of Apple Computer, Inc. UNIX is a registered trademark of AT&T.
© 1991 Seiko Instruments USA Inc. All rights reserved.

AnthroCart®

The best furniture you can buy for your equipment. Incredibly strong. Mobile. Flexible. Space saving. Lifetime warranty.

Choose different sizes and colors. Add the accessories you want. Discover Anthro's exceptional service.

Call us for our new catalog.



Free Catalog:
800-325-3841
6:30 AM to 5:00 PM PST



Technology Furniture®
3221 N.W. Yeon St.
Portland, OR 97210
(503)241-7113
Fax: (503)241-1619

GSA contract No. GS-00F-50404
Available for OEM applications
Made in USA
Prices start from \$159
We ship in 48 hours

Anthro, AnthroCart and Technology Furniture are registered trademarks of Anthro.



MACWORLD

HOW TO CONTACT MACWORLD

SUBSCRIPTION SERVICES

For subscription service questions, call 800/234-1038, 800/525-0643, or 303/447-9330, or write Subscriber Services, P.O. Box 54529, Boulder, CO 80322-4529. To place orders, call 800/288-6848. For dealer inquiries, call 800/999-1170.

MACWORLD ON AMERICA ONLINE

Macworld subscribers can contact Macworld editors online via the Macworld area on America Online. The area features reviews, news, new-product announcements, version information, a database of products, and Macworld-sponsored message boards and conferences. Several of our editors log on on a regular basis. To obtain a free America Online software kit, call 800/227-6364, extension 5254.

MACWORLD IN MICROFORM

Macworld is available on microfilm and microfiche from UMI, 300 N. Zeeb Rd., Ann Arbor, MI 48106-1346, 313/761-4700.

BACK ISSUES OF MACWORLD

Write to: Back Issues of Macworld, c/o Snyder Newell, Inc., P.O. Box 7046, San Francisco, CA 94120-9727; \$6 per issue (\$20 overseas). Prepayment in U.S. funds necessary.

MACWORLD EDITORIAL

MAIL OR COURIER Macworld Communications, Editorial Dept., 5th floor, 501 Second St., San Francisco, CA 94107; 415/243-0505.

AppleLink: Macworld1 Connect: Macworld1
CompuServe: 70370, 702 Fax: 415/442-0766

LETTERS TO THE EDITOR All written comments, questions, and suggestions regarding any aspect of the magazine are read by our editor. We reserve the right to edit all submissions; letters must include your name and address. Direct all correspondence (by mail or electronically) to: Letters to the Editor.

QUESTIONS AND QUICK TIPS Direct questions or tips on how to use Mac computers, peripherals, or software (by mail or electronically) to: Quick Tips, Lon Poole.

CONSUMER ADVOCATE Been burned? Really steamed? Direct your concerns (by mail or electronically) to: Conspicuous Consumer, Deborah Branscum.

NEW PRODUCTS AND UPDATES Direct press releases and product announcements (by mail or electronically), and shrink-wrapped software upgrades (by mail or courier) to: New Products Editor.

BUG REPORT AND TURKEY SHOOT Submit suggestions by mail (write Bug Report or Turkey Shoot on the envelope) or electronically (indicate Bug Report or Turkey Shoot in subject field).

EDITORIAL CALENDARS For a copy of Macworld's editorial calendar, direct requests (by mail) to: General Information, Editorial Dept.

REPRINTS AND PHOTOCOPY PERMISSION Permission will be granted by the copyright owner for those registered with the Copyright Clearance Center (CCC) to photocopy any article herein—for personal or internal reference use only—for the flat fee of \$1.50 per copy of the article or any part thereof. Specify ISSN 0741-8647 and send payment directly to the CCC at 27 Congress St., Salem, MA 01970. Address requests for reprint orders and for permission to copy editorial for other purposes to: Reprints and Permissions, Editorial Dept.

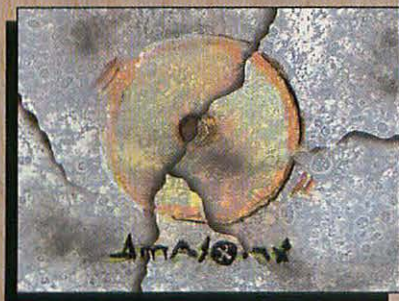
WRITING FOR MACWORLD Please do not send us unsolicited manuscripts. If you're interested in writing for Macworld, send a stamped, self-addressed envelope along with a request for our writer's guidelines. Direct (by mail) to: Writer's Guidelines, Editorial Dept.

Macworld is a publication of Macworld Communications, Inc. Macworld is an independent journal not affiliated with Apple Computer, Inc. Macworld is a registered trademark of IDG Communications, Inc. APPLE, the APPLE LOGO, MAC, and MACINTOSH are registered trademarks and MACLETTER is a trademark of Apple Computer, Inc. Printed in the United States of America. Copyright © 1992 Macworld Communications, Inc. All rights reserved. Macworld is a member of IDG Communications, the world's largest publisher of computer-related information. IDG Communications publishes over 150 computer publications in more than 50 major countries. Thirty million people read one or more IDG Communications publications each month.

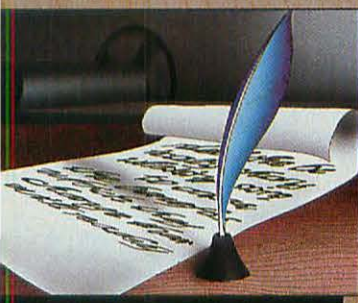


The Evolution of CAD

From the beginning of time, man has tried to express himself through graphics.

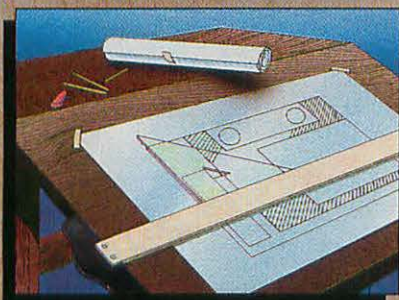


In the beginning man had to use primitive tools for creating graphic designs.

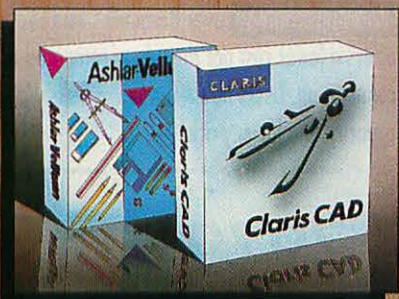


In the 15th Century design tools were quill ink pens and crude styles of paper.

By the 18th Century man had advanced to the drafting table with the T-squares, slide rules, precision ink pens and the dreaded eraser.



In the 20th Century the first CAD programs were very slow and extremely difficult to use, not to mention the expense of buying them.



As programs became easier to use, they thought they were radical and intelligent, but lacked real CAD power.

Circle 337 on reader service card

Now step into the 21st Century...

DesignCAD 2D/3D

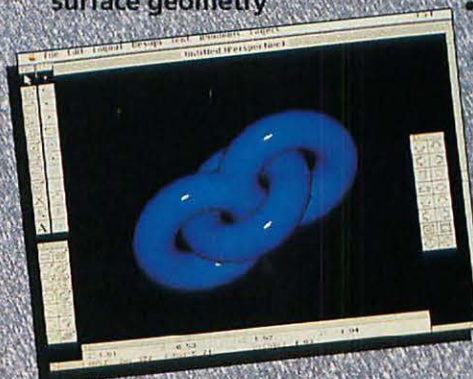
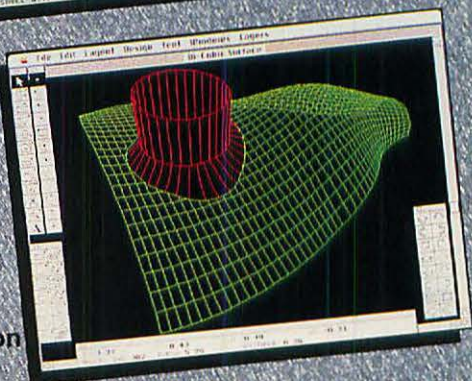
The power of intelligence!

New 3.0 Now Available



- Full 2D drafting
- Floating Point Precision
- Auto Isometric Viewing
- Associative Dimensioning
- Tolerance options
- Arrowhead choices
- 256 layers

- Related and Auto Update Windows
- Unlimited color Support
- Fast, Smooth 3D Shading in any view
- Specular Highlighting
- Real-Time Rotation
- Unified Bi-Cubic surface geometry



- Automatic Hidden Line Removal in any View
- Perspective or Orthographic calculations
- Import & Export DXF, IGES, XYZ Coordinates, & DesignCAD MS-DOS

for only...

\$699

MACRenderman Compatible

Call or write for FREE BROCHURE & DEMO DISK
Phone (918) 825-4848 FAX (918) 825-6359



DesignCAD, Inc.

1 American Way • Pryor OK 74361

See us Macworld Expo
Brooks Hall Booth # 5000

THE PINN

TYPE: 3.5" OPTICAL
CAPACITY: 128 MB
SIZE: 6.75"(H) x 2.125"(W) x 8.25"(L)
MOUNTING: VERTICAL OR HORIZONTAL

The Pinnacle. The top. The leader in optical storage. Since 1988, Pinnacle's been the world's leader in optical storage solutions, shipping more systems than any other company.

Introducing the Pinnacle Micro REO-130S rewritable optical drive featuring the new Sony 3.5" mechanism. With its 38 msec access time, the REO-130S is the perfect storage solution for personal computing, desktop publishing, multimedia, data distribution and backup.

Company	Per Disk Price	Per Disk Capacity	Price For 5 Disks	Capacity Of 5 Disks	Drive Price
Pinnacle Micro REO-130S	\$ 79	128 MB	\$ 395	640 MB	\$1995
Imagicon Bernoulli® 90	229	90 MB	1145	450 MB	1149
Syquest™ (PLI) 88	229	88 MB	1190	440 MB	1199

Pricing advantage over Bernoulli® and Syquest™. Pinnacle's REO-130S offers a lower cost per megabyte compared to its magnetic storage competition. Users now need fewer disks while getting more storage capacity at a lower price.

Trademark Owners: REO-130S of Pinnacle Micro, Inc.; PLI of Peripheral Land, Inc.; Syquest of Syquest Corp. Registered Owners: Bernoulli of Imagicon; Pricing acquired directly from manufacturers on 11-5-91.



800-553-7070

19 Technology • Irvine CA 92718 • In CA (714) 727-3300 • Fax (714) 727-1913

Circle 266 on reader service card

ACLE.



Optical Technology has distinct advantages over the Bernoulli® and Syquest™ technology. Since optical drives use laser technology to store information there is no chance of head crashes. 3.5" optical has a much smaller footprint than 5.25" magnetic but holds 40% more data.

Reliability of optical media is 15 years (shelf life) - that's 3 times longer than Bernoulli® and Syquest™ magnetic disks. Since the 3.5" cartridges are removable, optical remains the most secure way of storing your data into the future.

Media Standards for 3.5" optical disks have both ISO and ANSI standards to support the technology, while Bernoulli® and Syquest™ have none. Each 3.5" disk can be recognized in any 3.5" ISO/ANSI standard optical drive.

The Pinnacle Advantage is clear. Pinnacle Micro dominates the optical storage industry by offering the largest selection of 3.5" and 5.25" optical drives and disk changers. Interface kits are available for MAC, SUN, DEC, IBM and compatibles. The Pinnacle. Your next storage system.

PINNACLE MICRO
THE OPTICAL STORAGE COMPANY

There's much more to QuarkXPress than what's in the box.

Precision typography, advanced graphics handling, plus sophisticated color, prepress, and printing capabilities have made QuarkXPress® the professional choice for page layout software. But when you buy QuarkXPress, you're also buying a whole new set of options. Here are just a few of the extras available to QuarkXPress users:

1 Extended Power.

QuarkXTensions® technology enables Quark and third-party developers to create add-on software modules that enhance the power of QuarkXPress. With more than 75 XTensions currently available, you can customize QuarkXPress to resolve even the most complex publishing tasks. Or become a Quark developer and create your own XTension.

2 Fast Fractions.

QuarkFreebies 3.1 is a new QuarkXTension available free through on-line services and sent free to all QuarkXPress users under a One-Year Service Plan. It gives QuarkXPress users features such as the ability to quickly create typographer's fractions and prices.

3 Free Solutions.

Quark has developed a series of free QuarkXTensions, including PM Import, which lets you import PageMaker® files directly into QuarkXPress, and the Cool Blends XTension, which lets you create radial and irregular blends in QuarkXPress 3.1. These XTensions will be available free through on-line services and sent free to QuarkXPress users under the One-Year Service Plan.

4 Strong Support.

Depending on which Quark Service Plan you choose, you can receive toll-free technical support, free or substantially discounted upgrades, and a free subscription to Quark's how-to newsletter, *Expressions*.

5 On-Line Assistance.

In addition to the technical support you can receive with Quark's Service Plans, Quark personnel are available — free — for questions on all the major on-line services, including CompuServe's DTP Forum, America OnLine, Connect, and AppleLink.

6 QuarkEd.

QuarkEd™ is a training program that gives you the opportunity to learn more about QuarkXPress, no matter what your skill level. To supplement the QuarkXPress reference manuals, QuarkEd materials can be used as self-paced tutorials or in a classroom setting.

7 Real-World Training.

Quark Authorized Training Centers are a nationwide network of Quark-certified training centers and consultants that help QuarkXPress users get up and running and become QuarkXPress power users. But that's not the only way to learn from the experts — QuarkXPress is taught at more than 1,000 colleges and universities across the country.

8 Priority Service.

Designed for users of multiple copies of QuarkXPress, the ServicePlus support program offers priority access to Quark technical support, extended service hours, consolidation of serial numbers, invitations to Quark events and meetings, and discounts on many Quark products.

9 Trouble-Free Output.

Quark's Authorized Service Bureau program is a nationwide network of more than 750 hand-picked service bureaus that helps QuarkXPress users find reliable, expert output services. In 1991, the Association for Imaging Service Bureaus (AISB) awarded Quark its "Most Trouble-Free Software" citation for QuarkXPress 3.0.

10 Super New Printer Control.

QuarkPrint™ is a new QuarkXTension for QuarkXPress 3.1 that gives you even more powerful printing capabilities, such as the ability to save frequently used print settings. Available through Quark Authorized Dealers, QuarkPrint's suggested U.S. list price is \$195.

For a free brochure about these and other Quark products and services, call the Quark Product Literature & Ordering number at (800) 788-7835, or (303) 934-2211 within Colorado.

QUARK

Quark, QuarkXPress, and QuarkXTensions are registered trademarks of Quark, Inc. All other trademarks are the property of their respective owners.

Circle 295 on reader service card



MacBulletin

L A T E - B R E A K I N G N E W S

Fair Witness has been upgraded. Version 1.1 of Chena Software's (215/770-1210) combination brainstorming and planning tool opens and saves files faster, imports tables, performs calculations between columns, and supports AppleEvents, including publish and subscribe.

Virtus Does QuickTime: Version 1.1 of Virtus's (919/467-9700) 3-D modeler with real-time walk-through capability will be able to save walk-throughs as QuickTime movies.

MIDI Control Standard: The MIDI Manufacturers Association (213/649-6434) and its Japanese equivalent have agreed on a standard for using MIDI to control stage and performance equipment.

Business Sense has been acquired by Wyoming Software (307/789-7257), which is marketing the accounting package and developing an upgrade. The current version lists for \$199.

PosterWorks Goes Pro: PosterWorks 2.1, from S.H. Pierce (617/395-8350), has built-in color-calibration tools and can scale groups of objects. The company has also published Bureau Edition, a special version of PosterWorks for service bureaus.

Apple has appealed the tariff on flat-panel displays to the Court of International Trade. The higher cost of the displays used in the PowerBooks has forced Apple to move some production offshore.

Jasmine's court-appointed trustee in the company's Chapter 7 bankruptcy is Ed Towers, who can be reached by writing to 1255 Post St.,

#404, San Francisco, CA 94109. To contact the bankruptcy court for claim forms, call 415/705-3200 and refer to case number 3-90-00964T-TC. (Both DriveSavers [415/883-4232] and MiPro III [415/306-1100] are offering Jasmine drive owners 25 percent discounts on normal repair services.)

Mitsubishi's new displays measure 20, 26, and 37 inches diagonally. The new members of Mitsubishi's (714/220-2500) Diamond Pro series offer resolutions up to 1280 by 1024.

Farallon Sells MacRecorder: Macro-Mind/Paracomp (415/442-0200) has acquired the sound-input device and its SoundEdit software. Farallon (510/596-9100) also plans to sell off MediaTracks and unannounced multimedia products, to focus on networking.

Virus and Security Information: The 870-page proceedings from the fourth annual Computer Virus and Security Conference are available for \$100. This year's conference will be held March 12 and 13 in New York. For information, call 800/835-2246 ext. 190.

Tactic Back in Nest: Tactic Software was started in 1990 by a former Olduvai manager with several software packages inherited from Olduvai. Tactic and its expanded line has been reacquired by Olduvai (305/665-4665).

Apple supports the PowerBook with a toll-free phone number—800/767-2775—that owners can call any weekday. Support technicians will try to fix problems, direct the user to a support center, or help arrange pickup and return of the notebook Mac. **m**

OmniPage Professional...

The Amazing HOUDINI

THE GREATEST ESCAPE ARTIST OF

adies and gentlemen, step right up and experience the magic of OmniPage®, the most amazing OCR (optical character recognition) software of all time. And discover for yourself why eight out of ten business professionals choose OmniPage as the last word in Omnifont OCR.

OmniPage Professional, known worldwide for reading documents at daring speeds of up to 2000 wpm (words per minute) and scanning them into most PC compatible and Macintosh® word processor, spreadsheet, and data base files, is ready to demonstrate its greatest feat yet – the ability to recognize images.

Thanks to the innovative, new Graphic Editor™, you can now scan any image, from any source, with picture-perfect accuracy.

Of course

CARDIFF EMPIRE
MONDAY, JAN. 31st, 1910 and TUESDAY NIGHT
7.00 and 9.15 and 11.00 and 12.15
THE WORLD-FAMOUS WITNESS!

HOUDINI

WATER TORTURE CELL
£200

CASELLI BIDDING
HAPPY TO
PARKE

PETER & POITS
THE GREAT
WEILAND HUNTER
FERRY CORWE
COOPER & LA

OmniPage Professional captures the same stunning capabilities that have been attracting crowds for years. Virtually no matter what the format – can even perform incredible recognition tasks on read special characters, bolts, or icons, and scientific symbols and smudged and



INI!

THIS CENTURY

Professional still features character scanning capabilities that have been attracting crowds for years. Virtually no matter what the format – can even perform incredible recognition tasks on read special characters, bolts, or icons, and scientific symbols and smudged and

ters found in real world documents.

The Verification Window feature allows verification of any character, word, or number with the greatest of ease and click-ease. OmniPage Professional holds the only fully interactive spellchecker, allowing correction of errors – even in source text.

Even Harry Houdini, grand master of magic, appreciate the powers.



Fact:

HOUDINI MOST LOVED HIS DARING FROM A SAFE FILLICE WATER THAN 55

World Records for Fast Escapes

Simply Magical!

There's simply no better way to describe *OmniPage® Professional* other than magical. It's quick. Powerful. And the undisputed leader in OCR software.

It's no wonder that the vast majority of PC and Macintosh® professionals have chosen *OmniPage* over every other option. *OmniPage* delivers. No false promises. No gimmicky offers. No illusions.

With *OmniPage Professional*, you get the world's fastest, most accurate, and most customizable OCR. You can scan virtually any text, no matter what font, font size or column format, and enter it directly into almost any word processor, spreadsheet or database.

What's more, *OmniPage Professional* now exclusively features HP AccuPage™, the new technology that dramatically enhances the text-recognition performance of the HP ScanJet IIc scanner.

That alone is pretty magical.

But now *OmniPage Professional* gives you the *complete* picture. Caere's Graphic Editor™ lets you scan, edit and enhance images – including photos, line drawings and illustrations. With the click of a button, you can scan compound documents and work with complete images – text *and* graphics. Magically.

You can scan newspapers and magazines with multiple columns of text and images. The magic of *OmniPage Professional* lets you transform even the toughest-to-read documents. Every "t" crossed. Every image precise. Your documents accurately scanned and recognized at blindingly fast speeds.

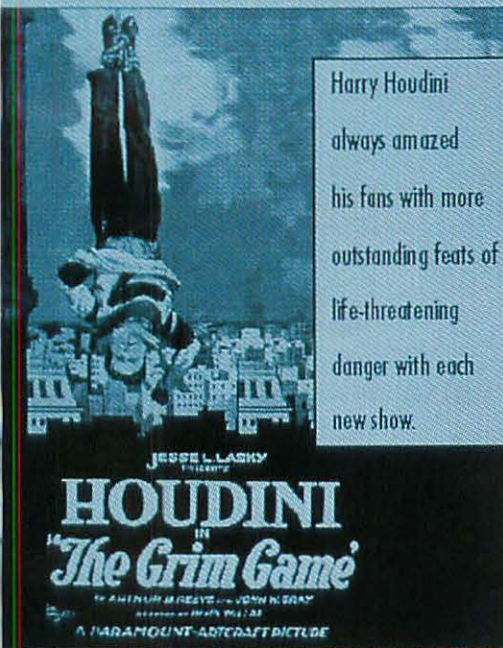
Whether you're scanning words, numbers or graphics, *OmniPage Professional* is the one OCR application that handles it all.

This "magical moment" is brought to you by Caere, the Complete Recognition Company.

OmniPage Professional now features complete grayscale image editing with The Graphic Editor.

Caere Corporation
100 Cooper Court
Los Gatos, CA 95030
1-800-535-SCAN

CAERE®

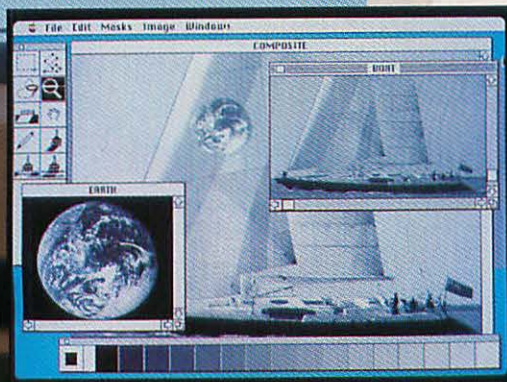


Harry Houdini
always amazed
his fans with more
outstanding feats of
life-threatening
danger with each
new show.



OmniPage Professional. For it was he who knew the key to any performance was making the difficult appear easy. In keeping with that philosophy, *OmniPage Professional* is crafted with ease-of-use in mind. *OmniPage Professional* is no illusion – free yourself from the chains of manually retyping documents and pasting images – it's simply magical!

No other OCR software product offers as much functionality as *OmniPage Professional*. Deferred Processing lets you choose selected portions of several pages, and then recognize the entire batch at once. So you can scan and recognize articles from business journals, scientific reports, or lengthy financial documents at record-breaking speeds.

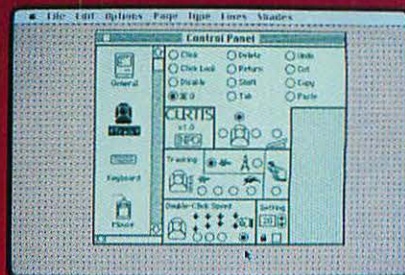


This is not your average mouse...

*ADB Version for
Macintosh SE/II.*

Meet MVP Mouse™ from Curtis.

One look tells you, MVP Mouse is not just another trackball. Its ergonomic 3-button design responds to your every impulse as if it were an extension of your hand. Its 200 DPI resolution and automatic acceleration give you pin-point cursor control *plus* the ability to "jump" across the screen with just a short, quick movement of your fingers. And its powerful control panel lets you select preset tracking and double-click speeds... or create your own! And it gives you dozens of button functions to choose from, including a Custom Command that simulates any ⌘-(letter) keyboard command.



You can assign any command to any button, quickly and easily on-screen. Optional Foot Switch acts as 4th command button.

#MVP-1 Retail \$149.95

For the Curtis dealer nearest you
call (603) 532-4123, Ext. 42

Manufacturing Company, Inc.

CURTIS

30 Fitzgerald Drive, Jaffrey, NH 03452

An **Insilco** Company

Actual Size

Take MVP Mouse for a spin. Visit your nearest Curtis dealer
for a hands-on demonstration.

© Curtis Manufacturing Company, Inc.

MVP Mouse is a trademark of Curtis Manufacturing Company, Inc. Macintosh is a registered trademark of Apple Computer, Inc.

Circle 20 on reader service card

Why Can't I Open This File? Or, Why John Warnock May Do It Again

BY JERRY BORRELL

IT'S ONE OF THOSE TYPICAL mornings. I've got too much to do, I'm fretting away with my Mac, the phone, a visitor, and small mountains of paper on my desk. I'm working with AppleLink, Apple's online information utility, trying to download a presentation for an upcoming conference. After doing the dance of a thousand small irritating things with AppleLink, like expanding a file in order to open it, I find myself confronted with a series of dialog boxes.

I'm just trying to look at this presentation, doing other things while my Macintosh IIcx slowly grinds away (I'm running System 7.0, what can I tell you). I'm not really paying attention to the Macintosh, just multiprocessing as usual. Finally it dawns on me that I have to give my full attention to the machine, because it clearly is not just making me wait, it's telling me it can't do what I want it to do. Hasn't that ever happened to you? You're working away on your computer, your attention divided between too many things at once, and suddenly you realize that you're stuck in a loop, not going anywhere.

My dilemma, I have come to realize, is all too familiar to any computer user. The person who wrote the presentation was working in some other application and saved his document in a format that my Mac doesn't recognize and my application can't open. Even choosing By Kind in the Finder's View menu won't tell me what kind of document it might be. So now I get to play "Guess what application someone else used?" This might make an interesting party game for some, but for most of us it represents one of the most frustrating and elusive problems in all of computing. And even if you were (as I was) eventually able to determine which application the file was created in, it wouldn't really solve the problem if you didn't have access to a program that could open it.

I am sad to say that as we progress along the road to computing of the future, this situation does not seem to be improving. (One possible exception is Adobe Photoshop, which has become the graphics software user's universal can opener; Photoshop can convert most graphics file formats into one you'll probably be able to use.)

Last year I wrote about this same issue, in relation to graphics file formats, and problems that I was having in trying to paste a graphic drawn in Aldus FreeHand into Microsoft's sadly neglected presentation program PowerPoint. It really didn't work. A year later Microsoft is still letting PowerPoint languish, and the situation with EPS, PICT, and TIFF formats is no better (except in situations in which I can call on Photoshop).

The inability to translate information from application to application, and from computer to computer, is probably the most aggravating problem that computer users face. It seems to happen most often with text-based documents, but graphics files are similarly troublesome. And now video or digital media has the potential to become yet another arena of incompatibility.

Presidents of computer software companies frequently proclaim that they intend to solve the problem, but what they are actually saying is that they intend to add software extensions to their own programs that will allow for the exchange of data between their applications and other applications. Still, I took it more seriously on the day in November when John Warnock, the CEO and co-founder (with Chuck Geschke) of Adobe Systems, sat down opposite me and earnestly made the case that

Adobe, developer of PostScript, would be the company to provide the Rosetta stone for electronic documents.

Back at the (Computer) Ranch

MEANWHILE, HERE I AM STUCK TRYING to access the document sent to me by one of Apple's executives when a dialog box finally tells me to open the document from within WriteNow, the T/Maker word processor. Ordinarily I use WriteNow as my word processor, but I had been stripping all the applications off my IIcx in preparation for upgrading it (with a logic board) to a Quadra. In the end, I copied the file to a disk and asked a friend to open and print the document for me. I was familiar with this routine because the editor of *Australian Macworld* uses Paragon Concepts' word processor Nisus and often sends his files to others in a Nisus format, much to their bewilderment.

But wait, you say. Using Microsoft Word, you could have opened those files. That's true, it is possible. Or I could have used the nearly impossible AppleTalk Filing Protocols (AFP), and their accompanying translators from DataViz. My point, however, is that the process is not convenient, it's not easily understood, and it's not something that anyone in a hurry would want to deal with.

Universal Document Architecture

THERE HAVE BEEN MANY attempts to provide an interchangeable file format for documents. Even the federal government has encouraged groups of manufacturers to work together on standards such as DCA (Document Content Architecture). Xerox, Hewlett-Packard, and other major



The inability to convey information from one format to another is probably the most aggravating problem computer users face

companies have spoken about interchangeable formats for years. Microsoft's Bill Gates has repeatedly talked about the need for a document interchange format. Most recently, Apple Computer itself has been at the forefront of development for the RTXT (rich text) data interchange standard—yet another attempt to devise a file format that will allow documents to retain their style, font, and formatting information across applications and platforms. RTXT has the support of dozens of computer industry vendors, but the standard addresses only a few aspects of the problems of documents produced by different applications on different manufacturer's computers.

Glue and DiskPaper

TOM EVSLIN OF SOLUTIONS, INC., one of the Macintosh's lesser-known developer heroes, introduced a product several years ago called Glue (and later, its successor, SuperGlue) that would produce a sort of electronic photocopy of a document that could be sent to another Mac, where it could then be viewed. The problem with Glue was that the files it produced were only images—because there was no intelligence associated with these

documents, you wouldn't be able to edit their text.

Reese Jones at Farallon Computing was the next person to take up the challenge of enabling computer users to read documents regardless of the application of their origin, and regardless of whether the user possessed that application. That product, called DiskPaper, is still in the works at the time I'm writing this column, but is nevertheless widely used. Many developers now ship user instructions for their programs as DiskPaper documents. A DiskPaper document contains page, format, text (both style and font), and graphics. The user is able to open any DiskPaper document because the document carries with it a "reader" or "viewer" that allows that to happen.

Adobe Is Interested, Too

SO I HAVE TO ADMIT IT WAS NOT A revelation to me when, in a meeting with Adobe Systems, I learned that the company is interested in the problem of a universal document architecture. PostScript, after all, is often touted as the single most powerful standard in the computer industry. Given the reality of the widespread use of PostScript in printers, that is a

credible claim. Adobe is one of the country's fastest-growing computer companies; fourth-largest seller of applications for the Macintosh; one of the largest sellers of typefaces in the world; the largest provider of technology to printer manufacturers; a developer of system-level software for IBM, Next, DEC, and others; and most recently, a developer of semiconductor products.

Adobe Systems is definitely a company to be watched, unlike, say, Claris, because Adobe is one of those few companies that are capable of posing a real challenge to Microsoft's dominant leadership. Although Adobe has exhibited strong marketing clout, it is not a company driven by marketing or venture capital. And more important, its founders have the knowledge to develop solutions to people's problems. Adobe also has a solid track record for taking its founders' ideas and translating them into a marketplace standard.

Does Adobe Have a Shot?

THE REAL ISSUE, ACCORDING TO Adobe cofounder John Warnock, is not the problem of opening different Macintosh applications. Instead Warnock

"Done *already*? Now that's the way to bind a report!"

You've seen it. Maybe even produced one yourself. The business report that needs to be covered and bound.

Some binding methods use complicated equipment, tedious hole punching, alignment, and plastic prongs. With those, it's a dreaded chore that, even when completed, produces only adequate results. Is that any way to bind reports?

Introducing 1st Impression™, the handy desktop binding system that's simple to use. Fully automatic, with advanced thermal technology, the unit binds up to 10 documents at



once... in just seconds. Choose from a wide variety of cover styles, colors, and sheet capacities to create the look that's right for the report. Whether contemporary or classic, earthy or upscale, your reports look customized and always professional. Your Office Products Dealer is ready to bind your latest report with 1st Impression™. Call 1-800-677-5150 for his location.

Dennison Stationery Products Company
300 Howard Street
Framingham, MA 01701

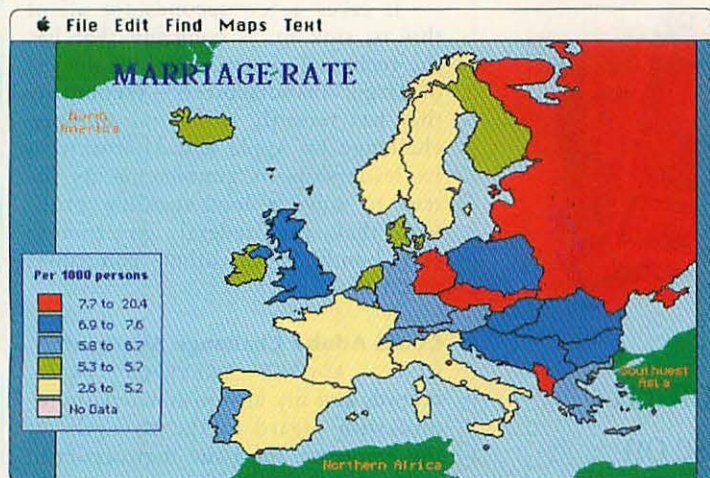
Circle 53 on reader service card.

 **AVERY
DENNISON**

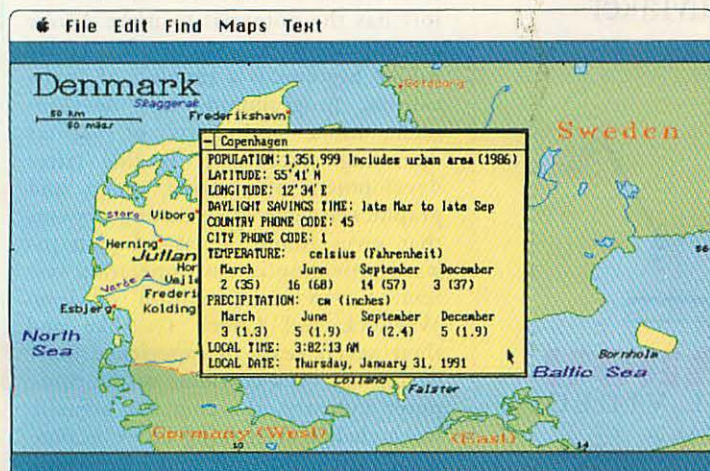
If You're Buying Any Other Atlas Program, You Ought To Have Your Maps Examined.



World Atlas has over 250 exceptionally detailed maps. And unlike other atlas programs, we even show the surrounding regions.



Our comparison maps are beyond comparison; we have over twice as many data sources as our nearest competitor.



World Atlas lets you call up instant, specific reference data without leaving your map. Other atlas programs don't.

While other atlas programs promise you the world, only The Software Toolworks World Atlas actually gives it to you.

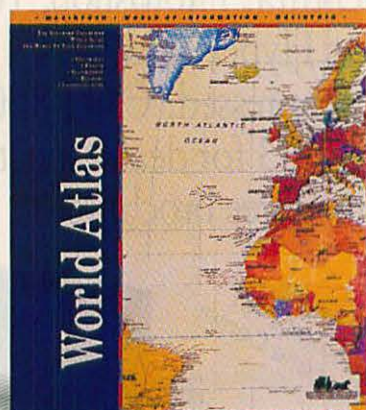
With just a click of the mouse, you can swiftly navigate the globe. And along the way, explore hundreds of the most comprehensive maps ever created for the Macintosh, including fascinating ocean depth maps. All developed by our team of professional cartographers.

But World Atlas is much more than a collection of outstanding maps; it's an atlas, almanac and world fact book all rolled into one. With over 250 cross reference topics for almost as many countries. And a world of useful international data on everything from divorce rates to exchange rates, all of which you can use to quickly create graphs, reports and custom maps.

So if you want to turn days of research into minutes, revolutionize your travel planning, or simply provide your kids with a better world, visit your nearest dealer or call us direct.

You may not live in a perfect world, but at least now you can own one. \$79.95*


THE SOFTWARE TOOLWORKS
1-800-234-3088



Available for B&W or Color MAC, diskette or CD-ROM.

© 1991 The Software Toolworks, Inc. The Software Toolworks is a registered trademark of The Software Toolworks, Inc. © 1989-91 Electromap, Inc. All rights reserved. *Suggested retail.

Circle 86 on reader service card



Impressive any way you look at it.



Our Still Video Imaging Kits let you convert objects into digitized images, ready for use on Mac, PC and Windows programs like PageMaker™, Ventura™, Photoshop™, Persuasion™, MediaMaker™ and HyperCard™.

Impressed? Call 1-800-221-3333 ext. 313 for dealer locations and a free brochure.

Macworld Expo
Booth# 2407
Moscone Center



Canon
STILL VIDEO

© 1991 Canon U.S.A., Inc.
One Canon Plaza, Lake Success, NY 11042

Circle 110 on reader service card.

Brand and Product names are trademarks of their respective holders.

Warnock is looking at the users of all computers, attempting to find a way for documents from any computer and any application to be opened and read by any others.

His approach to this potential miracle comes from lengthy experience with finding ways to make computers and their applications drive printers. According to Warnock, at some point during the process of sending data from computer to printer, the data can be captured and interpreted. In combination with a subset of PostScript, that data can then be used to create a new document that mimics the old one—giving the new document all the type, page geometry, graphics, and style of the original document. To view the new “mirror” document of your original, you will need a new application from Adobe that will act as a viewer. Warnock plans to offer a viewer for the Macintosh and for Windows, Next, and Unix machines. In fact, Adobe already has demonstrable versions of each product.

It takes a few seconds for all of this to sink in. A company that has the technical expertise to lead dozens of larger manufacturers—a company that has recently withstood an open challenge by Apple and Microsoft to its leadership—is announcing its intent to solve a long-standing problem that the federal government and hundreds of other companies could not.

Could Adobe Challenge Microsoft?

GIVEN ADOBE'S PREVIOUS TRACK record, and my all-too-obvious prejudice with regard to the strengths of the company, the issue that occurs to me as I conclude this column is not whether Adobe Systems has a chance to succeed, but whether this new effort has the potential to make Adobe as important as Microsoft. Today Adobe Systems is a supplier of applications, programming and development tools, and parts of various operating systems. It is this latter development of printing, video, and graphics aspects of operating systems that gives Adobe a natural path toward providing its own operating system. Given the ambition of John Warnock and Chuck Geschke and their seven years of experience wandering the back corridors of the computer industry, the company actually has a chance at growing up to become what Lotus, Borland, and even Apple aspire to. **m**

See us at
Macworld Expo!
Moscone Center, Booth #625

We're proud of our reputation.

"...The Good Housekeeping Seal. I'm now taking the safer course of buying from corporate-owned companies such as Quantum-backed La Cie..."

MacWeek, February 1991

"Between the good sales support and tech support that go the extra mile, La Cie is tops in my book!"

Bill Ringle, Philadelphia, PA

"La Cie offers the leading combination of software and performance."

Macworld, March 1990

The La Cie tradition of pride.

Pride in our products. Pride in our commitment to customers. Pride in who we are. At La Cie, "pride" has fueled each and every step in our success. Since our very first product, La Cie has earned an unsurpassed reputation for excellence. Top-rated performance. Award-winning design. From our sleek mass storage solutions to our Silverlining software, no other company in our industry has earned greater acclaim. Or appreciated it more.

LACIE
LIMITED
A QUANTUM COMPANY

To order or for more information, call toll-free

800-999-0143

6 a.m.-6 p.m. PST Mon.-Fri.

International 503-691-0771 Fax 503-691-5590

We're proud



La Cie PocketDrive

When size really counts.

As a Quantum Company, La Cie offers customers the advantages of \$489 million in assets. Deep-pockets R&D. State-of-the-art technology. Superior value. And, the assurance of long-term support. Yet for all our size, La Cie's smallest achievements still make our biggest headlines.

Introducing the PocketDrive.™ Portability in the palm of your hand.

Pack it in your pocket, purse or briefcase. La Cie's new 40MB and 80MB power-packed PocketDrives offer ounces of convenience,

La Cie 40MB PocketDrive

\$499

not pounds. Using Quantum's new 2 1/2" drive, the PocketDrive offers 19ms seek time, whisper-quiet operation and La Cie's exclusive switchable termination and SCSI ID.

Desktop docking.

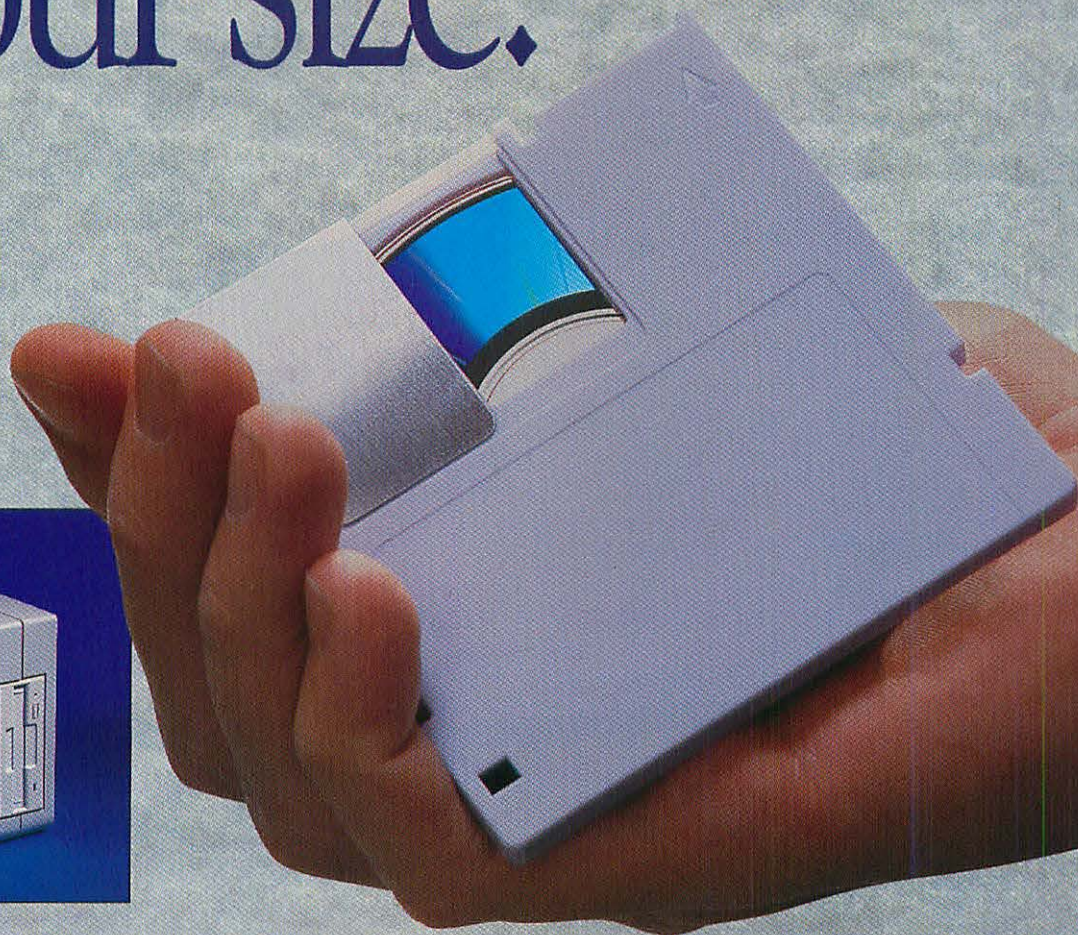
La Cie's PocketDrive eliminates the hassle of fumbling with cables at the back of your Macintosh every time you connect or disconnect the drive. Instead, the PocketDrive comes with a unique PocketDock™ desktop docking cable that lets you plug in the PocketDrive in seconds. With a second PocketDock (only \$99), you can have fast and easy connection at work and at home. There's even a miniature T-connector (only \$59) for connecting to other Macintosh systems.

Pocket Silverlining and an extendible 2-Year warranty.

Every PocketDrive comes complete with one PocketDock, our award-winning Silverlining hard disk management software and our extendible 2-Year Limited Warranty. For only \$1 per MB, you can enjoy 72-hour warranty service for up to 5 years.

Price does not include shipping. Add 5% surcharge for American Express. Add sales tax where applicable. La Cie is a trademark of La Cie, Ltd., a Quantum Company. All other trademarks are the property of their respective companies. All specifications, terms, descriptions, products and services herein are subject to change without notice or recourse. La Cie, Ltd., all rights reserved, printed in U.S.A. © Copyright 1991. 19552 SW 90th Court, Tualatin, OR 97062. Phone: (503) 691-0771, Fax: (503) 691-5590.

of our size.



La Cie MicroOptical Drive

Set your sites on a MicroOptical™ magneto optical drive.

Introducing MicroOptical. La Cie's remarkable new 3 1/2" magneto optical drive that offers massive storage capacity, superb reliability and high-speed performance in a compact case.

Space consciousness.

Smaller, faster and less expensive than conventional optical drives, La Cie's MicroOptical uses cartridges that are the same size as 3.5" floppies, but store eighty-eight times more data than high-density floppy disks. Engineered to fit within our space-saving, award-winning Cirrus case, the MicroOptical offers the reliability of optical media, 30ms seek times and the economy of removable cartridges.

La Cie MicroOptical Drive

\$1699

Lose Weight. Lose Wait.

Until now, optical technology had a reputation for being slow. MicroOptical drives at 30ms are faster than the conventional opticals. La Cie's MicroOptical leaves the others in the dust.

Try one on for size.

When you need major-league performance in a pint-sized package, call us. We offer surprisingly small prices and a huge commitment to service and support.

I'm now taking the safer course of buying from corporate-owned companies such as Quantum-backed La Cie..."
MacWeek

LACIE
LIMITED
A QUANTUM COMPANY

To order or for more information, call toll-free

800-999-0143

6 a.m.-6 p.m. PST Mon.-Fri.

International 503-691-0771 Fax 503-691-5590

We're proud

La Cie DAT Drive

La Cie ExpressDrive

La Cie Tsunami

The drive to satisfy.

At La Cie customer satisfaction is the driving force behind everything we do. From our innovative product design to our capable, courteous customer support, La Cie goes the extra mile to assure you quality, service and value.

La Cie award winning chassis. Quantum power under the hood.

Sleek. Streamlined. Easy handling. Economical. La Cie drives deliver the advantages of award-winning design and state-of-the-art technology. Inside and out. For high-speed performance you can depend on, all La Cie hard drives up to 400MB incorporate the world's most respected and most trusted drive mechanisms—Quantum!

La Cie hard drives from

\$299

Internals. Space savers. Portables.

La Cie offers customers a complete line of hard disk drives featuring state-of-the-art components, whisper-quiet half-speed fans, access times as low as 15ms, wide-range power supplies and La Cie's exclusive switchable termination and SCSI ID.

- 50MB-1.6GB Internal
- 50MB-1.6GB ZFP
- 50MB-400MB Cirrus
- 50MB-400MB Tsunami
- 50MB & 100MB Bacster™
- 40MB & 80MB PocketDrive

Drive the La Cie Express™

We love all our drives, but take a look at our newest arrival.

La Cie's new ExpressDrive™. Perfect for sensitive installations, the ExpressDrive is empowered with the performance of a Quantum fixed drive and the security and convenience of a removable drive, yet none of the risks of open-air media.

ExpressDrive from

\$Call

Price does not include shipping. Add 5% surcharge for American Express. Add sales tax where applicable. La Cie is a trademark of La Cie, Ltd., a Quantum Company. All other trademarks are the property of their respective companies. All specifications, terms, descriptions, products and services herein are subject to change without notice or recourse. La Cie, Ltd., all rights reserved, printed in U.S.A. © Copyright 1991. 19552 SW 90th Court, Tualatin, OR 97062. Phone: (503) 691-0771, Fax: (503) 691-5590.

of our drive.

La Cie Cirrus

La Cie MicroOptical Drive

La Cie PocketDrive

La Cie ZFP Drive

Readable. Writable. Removable.

Economical, versatile, ideal for archival backup, La Cie's comprehensive line of removable media options includes:

- Removable cartridge drives
- ExpressDrive
- 3 1/2" & 5 1/4" magneto opticals
- CD ROM

Every drive has a Silverlining.

Acclaimed the most powerful hard disk manager available, La Cie's Silverlining is included free with every hard drive!

Tape backup with Retrospect.

Tape drives from

\$649

Tucked neatly inside our Cirrus case, La Cie's 155MB or 600MB tape drives and 1.2GB or 2.0 GB DAT drives come with Retrospect software offering easy, economical data protection.

Up to 5-year warranty.

Ask about our generous warranties. La Cie offers up to a 5-Year Limited Warranty on Quantum drives and a speedy 72 hour turn-around on all warranty service!

Ready for a drive.

Don't let the quest for the right mass storage solution drive you wild. Call us. Our friendly, highly qualified staff will gladly help you select the perfect device to suit your needs and budget.

"Silverlining has bailed me out of so many tough situations, I've lost count."
Bobker's Dozen Best, MacUser, December, 1990

"La Cie hard disks are the most reliable and convenient disks I've ever had..."
James J. Haf, Lansing, MI

LACIE
LIMITED
A QUANTUM COMPANY

To order or for more information, call toll-free

800-999-0143

6 a.m.-6 p.m. PST Mon.-Fri.

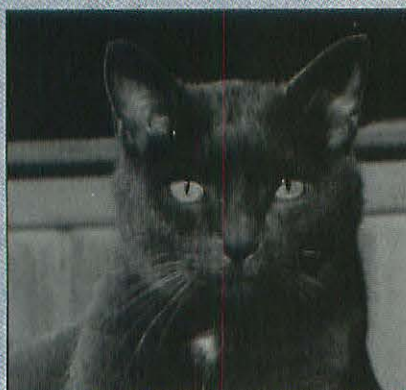
International 503-691-0771 Fax 503-691-5590

We're proud



Microtek 600ZS

\$2,195*



Howtek Scanmaster 3

\$8195**



La Cie Silverscanner

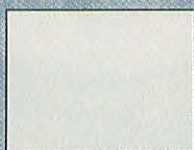
\$1,399



Microtek 600ZS
300 dpi at 1600%



Microtek 600ZS
600 dpi at 800%



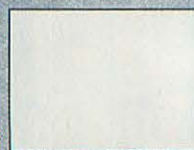
Microtek 600ZS
1200 dpi at 400%—n/a



Howtek Scanmaster 3
300 dpi at 1600%



Howtek Scanmaster 3
400 dpi at 1200%



Howtek Scanmaster 3
1200 dpi at 400%—n/a

Image is everything.

We believe quality is a priority. Our image as a company that produces quality products is well known. We're so confident in the quality of our scanner image that we are willing to compare it to other scanners right here. Compare for yourself.

Great color the first time.

Just look at the difference in the color scans. The single-pass Silverscanner has three separate noble gas-filled lamps for red, blue and green that are balanced so you get great scans the first time. With Silverscanner's built-in gamma correction, you get clean, bright scans with excellent detail in those hard-to-get areas that don't require difficult adjustment like other scanners. This can mean substantial time savings when every second counts.

The shadow knows.

Do you want good shadow detail? Then compare the black and white scans. The Silverscanner can give you production quality gray-scale scans for magazines, newspapers and brochures.

Lay it on the line.

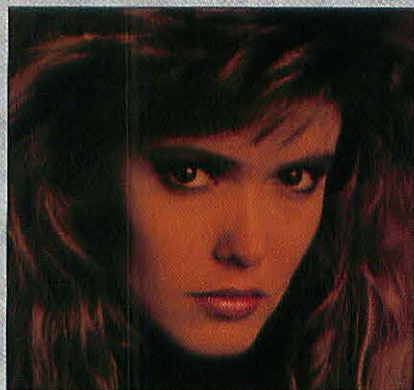
When comparing line art, the Silverscanner really shines! At 1200 dpi you get what amounts to an *electronic stat*. The comparison is incomplete, however, because some scanners don't have hi-res capability (too bad). But even if you compare at 400 or 600 dpi, it's clear how much better the Silverscanner is, especially bundled with Color It!

La Cie Silverscanner with Color It

\$1399

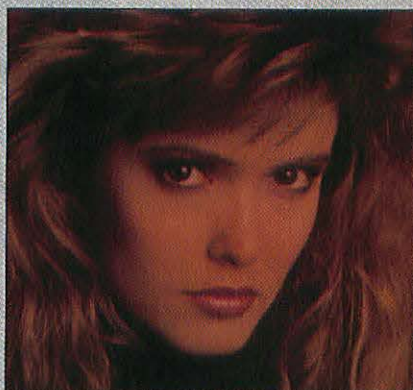
Price does not include shipping. Add 5% surcharge for American Express. Add sales tax where applicable. La Cie is a trademark of La Cie, Ltd., a Quantum Company. All other trademarks are the property of their respective companies. *Price advertised in Macworld, Sept. 91. **From Howtek price list, effective 3-1-91. All specifications, terms, descriptions, products and services herein are subject to change without notice or recourse. Bundles in U.S.A. only. Ad design and production by Graphic Witness. Subject photos by Dennis Carney. © Copyright 1991 La Cie, Ltd., 19552 SW 90th Court, Tualatin, OR 97062. Phone: (503) 691-0771, Fax: (503) 691-5590. All rights reserved. Printed in U.S.A.

of our image.



Microtek 600ZS

\$2,195*



Howtek Scanmaster 3

\$8195**



La Cie Silverscanner

\$1,399



La Cie Silverscanner
300 dpi at 1600%

La Cie Silverscanner
600 dpi at 800%

La Cie Silverscanner
1200 dpi at 400%

All scans were done at default settings with no corrections. The color images were separated using Adobe Photoshop. The logo was scanned as grayscale and as line art. This entire ad was done on the Macintosh using Silverscanner, Photoshop, Quark XPress and a PostScript Imagesetter. The entire production cost was \$145.



La Cie Silverscanner
1200 dpi at 100%



Software to die for!

We're proud of our image when it comes to quality software, too. La Cie has always had a reputation for powerful, well-written software. La Cie's exclusive plug-in modules for Photoshop, ColorStudio, Digital Darkroom, Enhance, ImageStudio and RagTime have been hailed as some of the best software ever written for flat-bed scanners. Enjoy features like fast dynamic color previews, independent color/brightness controls, nine scan modes, savable scan settings, color dropout, magnified previews, proof scans, 25% to 400% scaling in 1% steps, and 25 dpi to 1200 dpi in 1 dpi steps.

Silverscanner is OCR and Apple System 7 compatible and can be purchased with full versions of Adobe Photoshop and Letraset's ColorStudio—a \$2139 value for only \$1899!

La Cie Silverscanner with
Photoshop and ColorStudio

\$1899

Who ya gonna call?

La Cie offers you toll-free expert technical support. We know scanning inside and out. We can help you. And we'll be here for you tomorrow because La Cie is a Quantum Company.

Seeing is believing.

La Cie is so proud of the Silverscanner, we used it to produce this ad. Not just the comparisons, *everything*. Call and order yours today.

"The choice is clear . . . buy the La Cie Silverscanner."
Macworld, June 1991

LACIE
LIMITED
A QUANTUM COMPANY

To order or for more information, call toll-free

800-999-0143

6 a.m.-6 p.m.PST Mon.-Fri.

International 503-691-0771 Fax 503-691-5590

See us at
Macworld Expo!
Moscone Center, Booth #625

We're proud of our value.

50MB Quantum **\$299***

50MB.....	\$299 Int.	\$339 Ext.	155MB Tape Drive	\$649
100MB.....	\$429 Int.	\$479 Ext.	600MB Tape Drive	\$1199
120MB.....	\$529 Int.	\$579 Ext.	1.2-2.0GB DAT Drive	\$1799
200MB.....	\$729 Int.	\$779 Ext.	128MB MicroOptical	\$1699
400MB.....	\$1399 Int.	\$1499 Ext.	ExpressDrive	\$Call
1.2GB.....	\$2749 Int.	\$2899 Ext.	SilverScanner	\$1399
80MB PocketDrive.....	\$649		SilverLining.....	\$149

Call for products not listed.

You'll be delighted at La Cie's competitive prices. Especially when you consider what you get absolutely free. Like our acclaimed SilverLining software. Five megabytes of public domain software. A 2-Year Limited Warranty on Quantum mechanisms (extendible to 5 years). 72-hour turn-around on warranty service. Prompt, courteous, competent service.

At La Cie, we take pride in the unsurpassed value we offer customers. From our state-of-the-art technology to our award-winning design, La Cie never stops working to bring you better products and services than ever before. And because we're a Quantum Company, you can be assured La Cie will continue to provide you service and support for years to come.

LACIE
LIMITED
A QUANTUM COMPANY

To order or for more information, call toll-free

800-999-0143

6 a.m.-6 p.m. PST Mon.-Fri.

International 503-691-0771 Fax 503-691-5590

*Prices subject to change. Please call for lowest current prices and volume discounts.

Letters

FEBRUARY 1992

Blue about Apple

MR. LEVY IS A WHINING, hopelessly pseudo-politically correct fool who has no sense of the future of the computing industry or of the nature of life in a market economy (*The Iconoclast*, October 1991). Apple has realized that the value of idealism must be tempered with an eye toward profit, and IBM has seen the value of making its products more user-friendly. What matters most is what I do with the machine, not who built it!

Tom Igoe
Somerville, Massachusetts

IT IS REFRESHING TO HEAR FROM someone who feels the same as I do, that the Apple has ripened and is starting to rot.

James Harris
Fairburn, Georgia

PLEASE REMEMBER THIS: EVEN higher on the Apple credo than "Hate IBM," even higher than "the rest of us," is a passion for changing the world. That's the line Jobs used to recruit Sculley. That's the line that brought a lot of us here.

Even though we've built a better mousetrap, 90 percent of the market has conspicuously declined to beat a path to our door. So, if we're to take our mission as seriously as you seem to want us to, we need to find some breakout strategies. And yes, in the process, Apple will change. But can anyone expect to change the world and not be changed in the process?

Michael Markman
Manager, Apple Creative Services
Apple Computer
Cupertino, California

THOSE OF US IN THE TRENCHES who have to deal with multiple platforms have been happily converging Apple and IBM for some time now. It is only now that Apple and

IBM, worried about having to really compete, with users escaping from separate marketing ghettos, have cobbled together the latest standard.

Steve Doyle
Kamuela, Hawaii

Rereviewing DesignStudio 2.0

STEVE ROTH'S REVIEW OF DesignStudio (November 1991) contained many errors and misstatements. Contrary to Roth's review, even Macintosh neophytes cut the process of placing elements on a page to two or three steps using keyboard commands. DesignStudio does allow one to set automatic preferences for a document. DesignStudio also allows the user manual control over minimum, maximum, and optimum word-spacing and letterspacing values for any character or word, not just for any paragraph (as in PageMaker and QuarkXPress).

Brent A. Duncan
La Selva Beach, California

DESIGNSTUDIO'S STYLE SHEETS are more flexible than either PageMaker's or QuarkXPress's, which only allow for one style per paragraph. Furthermore, I wouldn't want to edit rotated text while standing on my head, as QuarkXPress forces me to do.

Jim Alley
Savannah, Georgia

YOU WRITE THAT HYPHENATION and justification apply to the whole document—but you can apply hyphenation and justification to any range of selected text. You write DesignStudio works only with PostScript printers, but a 2.5 version is in the works for the beginning of the year that will offer full QuickDraw support.

Last, your review did not mention that only Letraset offers unlimited, toll-free

continues

PORTABLE POWER 90s

POWER for the 90s PRICED in the 90s

PowerBook 140
\$99*/mo for 36 months

PowerBook 170
\$99*/mo for 48 months

POWERBOOK 140
• 2 MB fast 80ns RAM
• 40 MB hard drive

POWERBOOK 170
• 4 MB fast 80ns RAM
• 40 MB hard drive
• Fax modem available

REAL POWER for people on the go!

LEASING ADVANTAGES

- Leasing is FAST and EASY!
- Get more computer for your money - Leasing costs less!
- Tax advantage - payments can be a deductible expense
- Conserve your working capital
- Equipment pays for itself
- Have flexibility to expand

* Fast credit approval required. Call for details.

The Classic II is 3 times faster than the original Mac Plus!

68030 at 16MHz LIGHTNING FAST!

Mac Classic II
\$99*/mo for 24 months

Ask About QuickKor Kare Extended Service

800 331-1322
24 hour QUICKFAX (503) 286-8710
Local: (503) 286-9350

Mac Friends

For all the portable power you need, Call MacFriends TODAY!

AMERICA'S "MAC-ONLY" STORE

FEDERAL EXPRESS

QuickKor Kare

AMERICAN EXPRESS

Circle 58 on reader service card.

SYSTEM 7 JUST LIKE HAVING A PRIVATE TUTOR MICROSOFT

PERSONAL
TRAINING

See us at Macworld Expo Booth # 619, Moscone Center



POWER DEFINED.



POWER REALIZED.

Unleash the full potential of your Macintosh software investment with PTS. Each tutorial contains an audio cassette with step-by-step self-paced instructions, an interactive practice disk of lessons, Command Summary Card and Extra Practice Card. Our tutorials offer beginning, intermediate and advanced levels of these Macintosh applications:

- | | |
|----------------|--------------|
| ■ Mac System 7 | ■ PageMaker |
| ■ Excel | ■ FreeHand |
| ■ Word | ■ Persuasion |
| ■ Works | ■ HyperCard |
| ■ QuarkXpress | ■ FileMaker |

Call your dealer or PTS at 1-800-832-2499.

It's just like having your own private tutor!

For a FREE color brochure of Personal Training tutorials for Macintosh software, send this coupon to: PERSONAL TRAINING SYSTEMS, 828 S. Bascom Ave., Suite 100, San Jose, CA 95128. Or call 1-800-832-2499.

NAME _____

ADDRESS _____

CITY _____ ST _____ ZIP _____

DAYTIME PHONE (_____) _____

PERSONAL TRAINING SYSTEMS®

© 1991 Personal Training Systems. All rights reserved. Personal Training and Personal Training Systems are registered trademarks of Personal Training Systems, Inc. The following are registered and unregistered trademarks of the following companies: Apple, Macintosh, System 7 — Apple Computer, Inc.; Claris, FileMaker Pro, HyperCard — Claris Corporation; Aldus, PageMaker, Persuasion, FreeHand — Aldus Corporation; Microsoft, Excel, Word, Works — Microsoft Corporation.

Circle 44 on reader service card.

The typical costs of data recovery done by DriveSavers range from \$150 to \$500 (Conspicuous Consumer, December 1991).

MacSPOC was written by Dan Adamo ("E-Mail in Space," Macworld News, December 1991). It does not display tracking stations or emergency reentry information. Also, the Apple engineer who worked on the Macintosh's Communications Toolbox is Byron Han.

The correct number for Harris Laboratories is 612/941-2948 (New Products, December 1991).

The correct telephone numbers for HyperBible are 719/594-4884, 800/777-1841, and fax 719/594-4271 (Where to Buy, December 1991).

The figures for SE/30 drive performance in "Macintosh Classic II: Improving on a Theme" did not include a Photoshop test; the figures for the drive's performance in "Macintosh Quadras: Power but No Pizzazz" did (both articles December 1991).

The Bernoulli Transportable 90 does not need cleaning cartridges (Reviews, December 1991).

The Pantone Matching System, Pantone-approved color-printer specifications, and the Pantone Professional Color Toolkit ("All about Color," January 1992) are products of Pantone, Inc. The Toolkit was developed by Pantone and Radius and is distributed free to Pantone licensees by the two companies.

free support. Both Aldus and Quark charge for support after 90 days.

Merrill Zoldan
Technical Support Manager
Letraset Graphic Design Software
Paramus, New Jersey

Please see our January 1992 issue for corrections. Steve Roth replies: Hyphenation and justification settings do apply to a whole document; users can turn them on and off for selected text, but can't adjust them for selected ranges or paragraphs. I consider QuarkXPress's ability to rotate in .001 increments better than DesignStudio's .1-degree increments. DesignStudio doesn't offer the trapping control of QuarkXPress. What's wrong with DesignStudio's styles? You can't, for example, apply any formatting to a piece of text if that kind of formatting is included in a style that's already been applied to that text, such as when you want to

continues

make a word italic in a paragraph of text that's in a style that includes the bold attribute. Or, suppose you style your copy in Microsoft Word and import the styled copy into a DesignStudio document with identically named but differently formatted styles. You'd expect that DesignStudio's styles would override those on the incoming file, but they don't. In fact, as you keep importing more Word files, DesignStudio keeps adding new versions of each style, ad infinitum.—Ed.

Mail on Mail-Order Macs

THIS YEAR I PURCHASED OVER \$9000 in hardware and software by mail order, and I am happy to share that I've experienced none of the problems you reported in your article (*Conspicuous Consumer*, November 1991).

Something you may want to look into further is why there is such disparity in shipping costs from one vendor to the next. I found prices to vary by as much as 20 percent.

*Randall W. Smith
Beacon Falls, Connecticut*

MASTERCARD AND VISA PROHIBIT merchants from charging surcharges on credit card purchases. Banks are the first line of defense against this practice, but are often remiss in enforcing the rule.

*Clinton Baller
Birmingham, Michigan*

YOU LIST THAT WE ONLY OFFER \$2-per-minute technical support on purchases. Actually, we only recently offered a 900 line to any consumer whose products are out of warranty or were never purchased from us, or who just need some expert Mac assistance. It is a completely separate program that would not apply to anyone buying new equipment from us, in which case we have a toll-free technical-support 800 line.

*Kevin Anderson
Product Manager, MacFriends
Portland, Oregon*

Complex Accounting

STEPHEN L. NELSON'S ARTICLE "Straightforward Accounting" (November 1991) oversimplifies the task of selecting information software.

In today's competitive marketplace, surviving companies are not content to accurately track and report historical accounting information. The accounting/information system should be a tool to make future decisions. A matrix of 50 items does not accurately rate a small

package, let alone the mid- and high-range packages with thousands of fields, features, and interfaces between modules.

*Gloria B. Morris
Portland, Oregon*

Looking for MaxAppleZoom

WOULD LIKE TO KNOW IF YOU can provide me with a mailing address for Naoto Horii so that I can

purchase his cdev MaxAppleZoom 1.3, mentioned in David Pogue's article (*The Desktop Critic*, October 1991). If you cannot provide that address, perhaps you can give me information about some other contact.

*David Owens
Chapel Hill, North Carolina*

The new MaxAppleZoom 1.4 is available through online information services; user groups (call 800/continues

Sell the Idea with Infini-D.™



You have great ideas. You need a tool to put your ideas to work.

Introducing Infini-D, a breakthrough 3D visualization package from Specular International.

Create stunning images for your proposals, prints and slides. Produce dynamic animations that breathe life into your video and multimedia presentations. All at a cost that will keep you ahead of the competition.

Find out why MacUser calls Infini-D "a quantum leap for 3D design packages priced at less than \$1,000."

Call (413) 549-7600, and we'll send you a free interactive tour showing how Infini-D can transform your ideas into reality.

Sell the Idea. With Infini-D.

S P E C U L A R
international™

233 North Pleasant Street • P.O. Box 888
Amherst, MA 01004-0888 • 413-549-7600
the imagination specialists

©1991 Specular International. All rights reserved. MacUser quote from October 1991 issue.

Circle 112 on reader service card.

"Laser 5" ©1991 Steve McKinnis, Artlytes.
"Landscape Shootout" ©1991 Peter Allen.
"3D Ban" ©1991 Robert Drummond, Murrie White.
"Dramatized Landscape" ©1991 Robert Drummond.
Infini-D™ and Specular International™ are trademarks of
Specular International, Ltd. All other trademarks are
property of their respective owners.

538-9696 ext. 500 for information on a local user group); and mail-order clearinghouses such as Educorp (619/536-9999 or 800/843-9497) or the Public Domain Exchange (408/496-0624 or 800/331-8125). The program works only on single-monitor Mac II systems and the Apple standard 13-inch color monitor.—Ed.

ELF Debate

WITH ITS LATEST SET OF electromagnetic radiation-related articles ("Seeking ELF Relief" and *Conspicuous Consumer*, October 1991), *Macworld* is seriously misleading its readership about the complexity of the problem. A reader comes away with the conclusion that the *only* serious threat to health from electromagnetic radiation (from any source) is the magnetic fields in the ELF frequency band. The concern about these fields is justified, but not to the exclusion of all others.

At the NIOSH conference referenced in *Conspicuous Consumer*, the operating principal established at the shielding session was that *both* the electric and magnetic fields of a system must be reduced. The Swedish guideline is important because it limits both electric and magnetic

field emissions from VDTs. The reader will also conclude from the article that the IEEE standards being proposed in the U.S. are equal to the Swedish MPR II. Not mentioned is that the IEEE specs allow ten times the ELF electric-field strength of MPR II.

A final but critical concern: There is a real question of safety in installing the E.L.F. Armor internal shielding device from Fairfield Engineering. The manual calls for the installer to wrap a ground wire around an insulated screwdriver and, while holding the insulated end of the screwdriver, discharge the high voltage that has accumulated in the CRT. How can *Macworld* justify promoting such a product?

Michael L. Hiles
President and CFO, NoRad Corporation
Santa Monica, California

The E.L.F. Armor manual warns that only a qualified technician should install the device. According to Fairfield Engineering president George Reid, the device "has been redesigned and improved many times with the purpose of making it safer and easier to install and to lower emissions." Even so, modifying a display can be dangerous; if you buy an E.L.F. Armor device, please protect yourself from injury by having it installed by an Apple-certified technician.—Ed.

Failing Floppies

OFFER A RESOUNDING "AMEN" TO Lon Poole's admonition about formatting 800K floppies to 1.44MB capacity (*Quick Tips*, October 1991). I wanted very much to believe the claims of disk-punch-makers that there was no difference except that little hole. I bought a ton of 800K floppies and proceeded to punch them with glee and initialize them at 1.44MB. I stored a year's worth of work on about 40 of these punched floppies. It was only after 6 months that I needed to access this data and they began to fail. What a nightmare. Just because a disk will format doesn't mean it will retain data over the long haul.

Mark Walker Rhodes
Dallas, Texas

Letters should be mailed to *Letters, Macworld*, 501 Second St., San Francisco, CA 94107, or sent electronically to CompuServe (70370,702), MCI Mail (294-8078), America Online (Macworld), or Apple-Link (Macworld1). Include a return address and a daytime telephone number. We regret that, due to the high volume of mail received, we are unable to respond personally to each letter. We reserve the right to edit all letters. All published letters become the property of *Macworld*. **m**

YEAR 2010: Will You Be The First Human To Reach Mars?

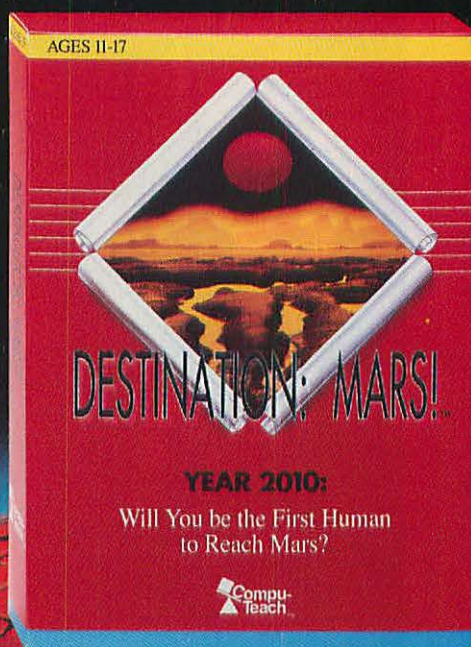
**WARNING... WARNING...
RADIATION ALERT!
INCOMING GALACTIC
COSMIC RAYS.**

**EARTH: SOLAR MONITOR
DETECTS RADIOACTIVE
ACTIVITY. YOUR MISSION
IS IN DANGER.**

**CREW: WE'VE ONLY GOT
3 MINUTES TO REACT!**

WHAT WILL YOU DO?

Available for:
*IBM *Macintosh *Apple *Apple IIgs
\$59.95



As a Space Agency Commander in the race to Mars, you are in charge. Consult the ship's database, make the correct decisions and claim the Red Planet. Make the wrong move and your mission is scrubbed!

While honing your critical thinking skills, **Destination: MARS!** helps you learn all the scientific facts you need to know for success. From low orbit research to surface exploration, **Destination: Mars!** will challenge you with authentic emergencies, experiments and adventures.

All Data Provided by NASA

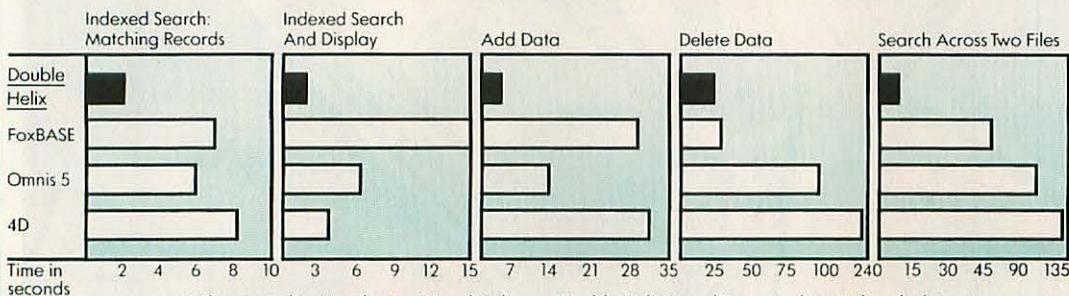


For more information and the store nearest you call toll free 1 800 44-TEACH (203) 777-7738



Since we know you're pressed for time, we'll skip the standard introduction and get straight to the point.

- Double Helix is the fastest multiuser relational database for



the Macintosh.[®] This, you should know, is not our personal assessment, but rather the conclusive results of MacUser magazine's June 1990 speed-test. And of the four top databases, in five key commands, Double Helix finished first. By considerable margins.

WELCOME TO THE WORLD'S
VERY FIRST MAC-BASED
CLIENT/ SERVER DATABASE.

- What makes Double Helix so fast?

Technically, it's because of our advanced client/server format. Unlike file servers, which slow your system down by shuffling copies around the network, client/server lets all users work directly off a master. This keeps network traffic down. And productivity up.



Client/server keeps everyone moving fast.

In addition to speed, client/server provides another crucial benefit: total referential integrity. In other words, when one user makes a change to the master, the whole network

gets updated—in real-time. On your screen. Right then and there. So everyone has the same data. And everyone's in sync. The end result: a group that's always working in one direction—forward.

- By the way, and for the record, we were the first ever to introduce a Mac-based client/server. And while it was revolutionary at its debut in 1986, it is, remarkably enough, still revolutionary today.

IMMEDIATE GRATIFICATION, RIGHT FROM THE START.

- Here is—and we quote—what MacWorld said in May 1990: "If you need a working database by Friday morning, and it's now Wednesday

day afternoon... your best bet is Double Helix." Talk about fast. With Double Helix in hand and no prior knowledge

at all, you can, in a matter of hours, mold Double Helix to conform to your individual needs. And as your needs change, so can, with minimal effort, your applications.



Not just built for speed: "Double Helix is the most user-friendly database currently available." MacUser, June 1990

**IF YOU'RE IN A HURRY,
READ THIS AD.**

DOUBLE HELIX IS THE MOST
AFFORDABLE MULTIUSER
SYSTEM AVAILABLE. HONEST.

- How do we figure? For one, the

multiuser application is already included in every Double Helix box. And unlike other databases, it doesn't require any special file server software or hardware, saving you additional and quite substantial start-up costs. So with Double Helix, there's nothing more to buy. Nothing more to install. And nothing more affordable. THE FASTER YOU GET GOING, THE FASTER YOU GET GOING.

- We've just spent the last 456 words talking about how fast and affordable Double Helix is. Now you can spend the next 14 numbers confirming it all for yourself. Call 1-800-323-5423, ext. 234 and we'll send you out a test flight demo and Quick Start instruction guide of your choice right away. After all, if you stayed with us this long, you've got no time to waste.



© ODESTA CORPORATION

Art Beat

Behind Macworld's Graphics

BY CATHY ABES

Artists: Jim Ludtke, Andrei Herasimchuk, John Cushwa.

Tools: Jim Ludtke: Mac IIx with 8MB of RAM and 50MHz DayStar Digital Accelerator; 300MB MicroNet external hard drive; MicroNet 45MB removable-cartridge drive; Swivel 3D Professional. Andrei Herasimchuk: Mac IIfx with 8MB of RAM and 040/50 DayStar PowerCache board; 680MB Fujitsu external hard drive; Sigma ColorMax 8/24 color board; Infini-D 1.1; Adobe Photoshop 2.0. John Cushwa: Mac IIfx with 20MB of RAM; a 173MB external hard drive; a Microtek MSF-300Z color scanner; a Wacom pressure-sensitive graphics tablet; Ray Dream Designer 1.1; JAG; Photoshop 2.0.

How It Was Done:

For this issue's feature article on 3-D modeling and rendering, "3-D: Structure, Surfaces, and Movement," 3-D animator and illustrator Jim Ludtke used Swivel 3D Professional to create a simple model—an oil lamp on a mantel in front of a framed mirror against a wall—that was then given to vendors of 3-D modeling and rendering packages to render. Each vendor chose an artist to render the scene; the results appear in the feature.

Along with the Swivel model, Ludtke provided a separate DXF file for each individual component of the scene, just in case anyone had trouble importing the Swivel file. Ludtke created the model with the intention of allowing the artists to use a variety of textures, both solid procedural and surface—such as glass, liquid, metal, wood, and marble—as well as ray tracing to create true reflections

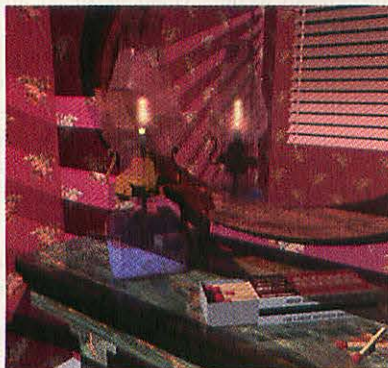
and refractions. Two of those artists and the rendering processes they used are described in detail here.

Andrei Herasimchuk of Specular International (maker of Infini-D) began by importing the Swivel model into Infini-D and making screen shots (8-shift-3 in System 7) of the outlines for each object. He then used those PICT files as templates to re-create the model with Infini-D's lathe and extrusion

workshops. He re-modeled every object except the lamp base and the liquid oil, which were left as free-form (editable) objects. He then copied and pasted each model into a final scene, where he repositioned them to match the specifications of the original model. The process took four to five hours.

Herasimchuk began choosing surfaces, settling on texture maps for the walls, mantel, and mirror frame. For the walls, he used a 231K PICT file from Form and Function's Wraptures CD, tiling it (repeating it horizontally and vertically) to create a solid, single image that covered the entire wall surface. Whereas creating one large texture map might have required as much as 2MB of RAM to work with, tiling one small file required only as much as the size of the original file.

Next, Herasimchuk applied a high-res scan of D'pix's Salome Marble PICT texture map to the front and top of the mantel using Infini-D's Wrap texture mode. Because Infini-D can be used to compose surfaces by combining various texture maps and layers, he was able to



This image rendered in Infini-D by Andrei Herasimchuk (using a supplied model) was one of the images produced for our 3-D modeling and rendering feature.

Acer, Acom, Advanced Matrix, Advanced Technologies, Alps,

Better Printing on over 1200 printers!

GDT's printer drivers reveal the hidden capabilities of virtually any printer and make it fully compatible with your Mac.

Here are some of our many common driver features:

Flexible

- Custom paper sizes.
- Reduction and enlargement from 10 to 400% in 1% increments.
- Page flipping and inversion.
- Larger print area for DeskWriter™.
- Easy default settings.
- Access to printer's internal fonts.
- Even/odd pages and reverse order printing.
- Complete bins and trays control.
- Ink density control.

Smart

- Fastest QuickDraw™ drivers.
- Smoother grayscale patterns.
- "No-Jam" label and forms printing.

Compatible

System 6 and 7, A/UX™ 2.0.1, Communications Toolbox, TrueType, Adobe Type Manager, SuperLaserSpool, NetSerial, etc.

Better Writers™

for serial Apple ImageWriter® I, II, and LQ, StyleWriter, and HP DeskWriter

JetLink Express™

for HP DeskJets and LaserJets, Canon BubbleJets and LaserBeams, and compatibles

PrintLink Collection™

for Epson FX and LQ, NEC Pinwriters, Toshiba P-series, HP ThinkJet, Diconix 150, and compatibles

GDT Softworks Inc.

4664 Lougheed Highway, Suite 188
Burnaby, BC Canada V5C 6B7
604-291-9121 604-291-9689 (fax)
800-663-6222 (orders) AppleLink:GDT.MKT

All product names are trademarks or registered trademarks of their respective holders.

Mannesmann Talley, Memorex, Mita, Mittek, NCR, NEC, Nishio,

Circle 42 on reader service card

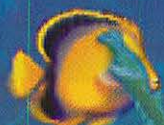
After Dark

THE ULTIMATE SCREEN SAVER
32 incredible displays to prevent
phosphor burn-in. Flying Toasters
and fantastic Fish. Screen-locking
password protection. Company
logo and message display.
SystemIQ activity monitor. \$49.95



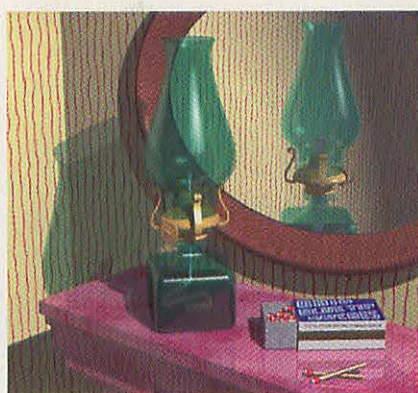
More After Dark

An all-new collection of 26 add-on
displays. Contest winners
Mowin' Man, Tunnel and GraphStat.
Virex@-D virus scanning module
from the makers of Virex. Boris the
Cat. Lunatic Fringe space game
from the creator of Solarian II.
Beautiful new fish. \$39.95



BERKELEY
SYSTEMS

2095 Rose St., Berkeley CA 94709
510 540 5535



Another image (rendered from the same model) created in Ray Dream Designer by Tom Cushwa.

assign the marble a 100 percent color map and a 30 percent reflection map to create subtle levels of reflection on the mantel where the darker shades appear. He next applied a mirror surface—a black texture set to 100 percent reflectiveness—to the mirror object. For the mirror's frame, he applied an oak texture map from the Wraptures CD.

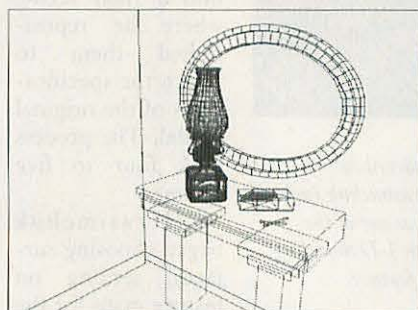
Rendering the lamp turned out to be the real challenge, because Herasimchuk wanted to approximate the feel of real glass while keeping the surface subtle enough to look photo-realistic. It could easily become too transparent or too bright. The amount and intensity of specular highlights and the refraction (the way light bends when it goes

through glass) also had to be just right. Using Infini-D's Rose Glass texture as a starting point, Herasimchuk lowered the amount of diffuse shading to make the glass look clear with a hint of red. To create refraction around the edges of the glass, he set the index of refraction to 1.1. He also made the glass 12 percent reflective so that the matchbox would be reflected in the lamp base. For the flame, he used a light-yellow point light.

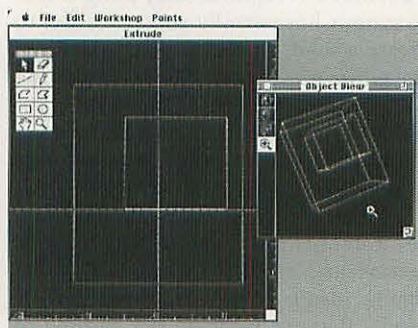
In Adobe Photoshop he created custom PICT maps for the top and side of the matchbox, which were then brought into Infini-D and applied to the model. He used procedural textures for the matches themselves: a light-brown noise and a red noise.

The final image was rendered at 1024 by 768 and took about 3½ days to render, at least double the normal rendering time. That was because Herasimchuk set the super-sampling (anti-aliasing) threshold to 2 percent instead of the default 20 percent and set the level of ray casting of reflections to 7 rays deep (instead of 3) and transparencies to 8 (instead of 5) to get the most realistic rendering. Using a 20MB virtual memory partition under System 7 also contributed to the slowdown. The final size of the image was 1.2MB.

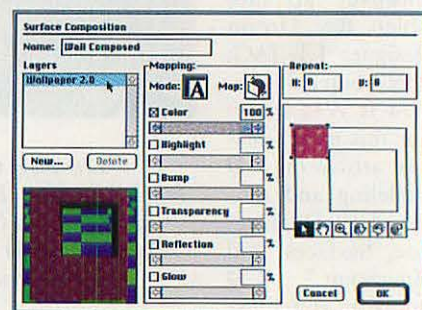
New York-based illustrator Tom Cushwa imported the original Swivel continues



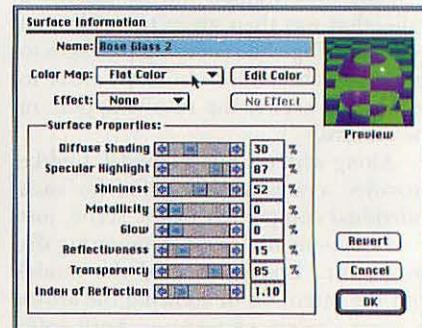
The original wireframe scene, modeled in Swivel 3-D Professional by Macworld artist Jim Ludtke, that was supplied to each of the vendors.



In Infini-D, Andrei Herasimchuk created the window that's reflected in the mirror, by punching a hole in the left wall that's out of the camera view.



Herasimchuk created the wall texture by vertically and horizontally repeating, or tiling, one small PICT file in Infini-D.



Herasimchuk experimented with the surface properties of the glass lamp to find the right combination of attributes.

Order it today! Use it tomorrow!

1. Carefully select all the fonts you want.
Complete font families only. Minimum \$100 order.
2. Select the same value of *fonts for free.*
Again, complete font families only.
3. Call our order desk.

Call 1-(800)-661-9410

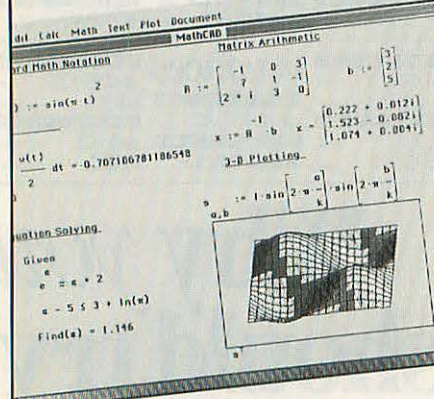
Guaranteed overnight Federal Express delivery.

Outside the USA call (403) 262 8008. Or place your font order by fax or mail. All major credit cards accepted. "The "Buy one, get one free!" offer expires 01/31/92. For a free catalog featuring the entire Image Club product line, call (403) 262 8008.

Image Club Graphics, Inc.
Suite 5 - 1902 Eleventh Street Southeast
Calgary, Alberta, Canada T2G 3G2
Phone (403) 262 8008 / Fax (403) 261 7013
AppLink CDA0573 / CompnServe 72560, 323D



Technical calculations made easy!



Perform engineering and scientific calculations faster... and with fewer errors.

- **Mathcad 2.0 does your numerical analyses quickly, easily... and inexpensively!** The live document interface™ lets you integrate equations, text, and graphics on your computer screen. You can see what you solve and update your equations and graphs with a single keystroke.
- **You do the thinking while Mathcad does the work.** Mathcad picks up where calculators and spreadsheets leave off. With over 120 commonly-used functions built-in, Mathcad can handle your formulas, exponentials, differentials, cubic splines, FFTs, and matrices.
- **Applications Packs customize Mathcad to your work.** Ten different packs are available for electrical, mechanical, civil, and chemical engineering, and other technical applications.
- **Mathcad works on your Macintosh, PC, or UNIX workstation.** More than 120,000 engineers, scientists, and educators are already using Mathcad to turn their computers into powerful workstations that can handle virtually any technical application.

Call 800-MATHCAD to request a free demo disk!



In Massachusetts, call 617-577-1017.
For a free Mathcad Introductory Kit, clip this coupon and mail it back to us, or fax it to 617-577-8829. Or circle your reader service card.

☐ **Yes! Tell me more about Mathcad 2.0!**

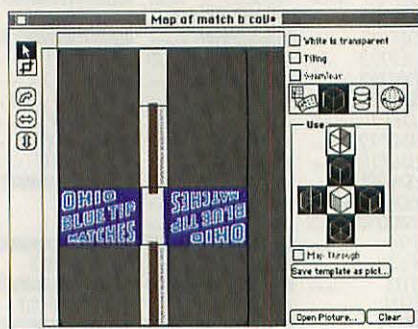
Name _____
Title _____
Company _____
Address _____
City _____ State _____ Zip _____
Phone (____) _____

MathSoft
z + v - x + f - k

MathSoft, Inc.
201 Broadway
Cambridge, MA 02139
USA

MCTECH 2.0

Circle 34 on reader service card.



Tom Cushwa used Ray Dream Designer's box texture mapping mode to build a template for the matchbox texture map he would design in Adobe Photoshop.

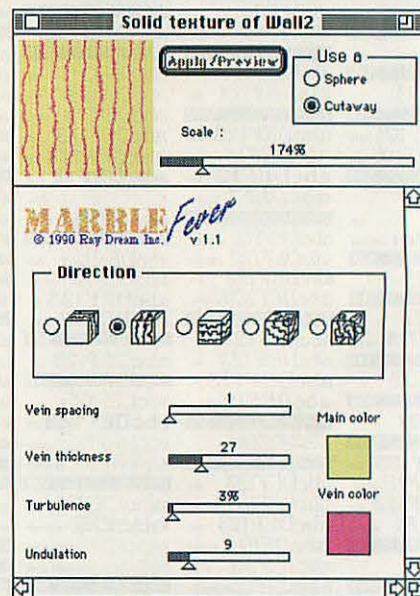
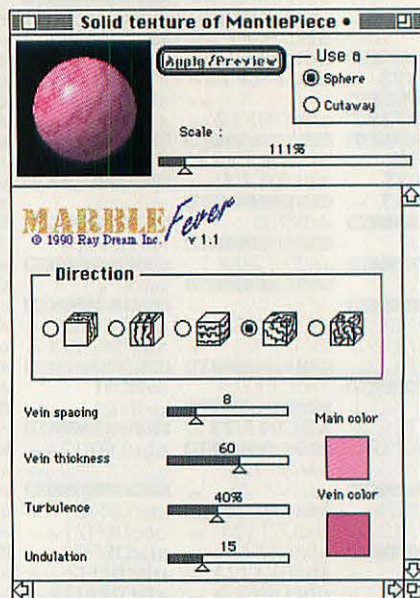
scene into Ray Dream Designer's SceneBuilder module. SceneBuilder automatically creates a separate file for each object, all of which can be opened in Ray Dream Designer's LightForge module. Because the Swivel model came in nearly intact, with everything positioned correctly, he had only to rebuild the mirror.

Cushwa opened up the box object in LightForge, where he did the only texture mapping in the image, for the matches and the matchbox. He used box texture mapping, which allowed him to save a template of the box he'd created. After bringing the template into Photoshop, Cushwa created a texture map by first scanning in an Ohio Blue Tip Matches box label, then creating the match strike in Photoshop and positioning it on the template so that it would map to the side of the box. He imported the map back into Ray Dream Designer and wrapped the map onto the surface of the box model. He created one match using the solid procedural wood texture and texture-mapped the red-and-white tip over the wood texture onto the match, then duplicated the match numerous times.

Cushwa made the mantel semi-reflective (16 percent) so that it would reflect the matchbox. He used the same solid procedural texture—marble—for both the mantel and the wallpaper, but with vastly different parameters so that he ended up with two totally different textures. He used the Woodworks solid texture for the mirror frame.

For the glass in the lamp, Cushwa set object parameters of 18 percent reflectiveness and 80 percent transparency, a light-blue color, and a small (5 percent), bright (72 percent) highlight with zero refraction. He made the mirror 100 percent reflective. For the oil in the lamp, he specified 90 percent transparency so the wick would show through.

The single light source is a white spotlight set at a 32-degree angle in the



Cushwa created two distinct textures—one for the mantle (top) and the other for the wall (bottom)—using the same marble solid texture but with different settings.

upper-right corner. He gave the light a falloff of 40 percent, so that it would gradually diminish into darkness, an effect particularly noticeable in the reflection on the mirror.

After rendering the final image, Cushwa ran the resulting PICT file through JAG, Ray Dream's antialiasing utility, to smooth out any jagged edges.

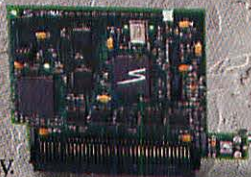
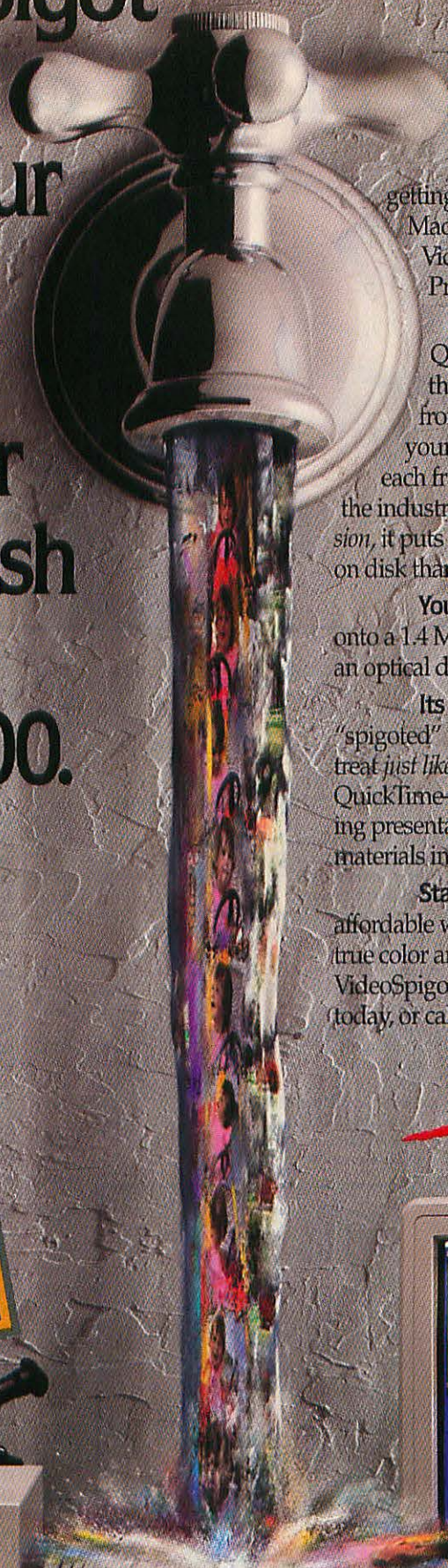
The entire modeling-and-rendering process took roughly 12 hours. Rendering time was approximately 3 hours. Most of the time involved doing ten separate test renderings at low resolution in order to fine-tune the parameters, mostly for the glass and positioning the lighting. The final file size was 1MB. **m**

VideoSpigot

Now, pour
video
directly
into your
Macintosh
for less
than \$500.

See us at
MacWorld
San Francisco
Booth #1017
Moscone Center

FREE
ADOBE PREMIERE
DIGITAL MOVIE-MAKING TOOL
\$495 VALUE
LIMITED-TIME OFFER
SEE YOUR RESELLER FOR DETAILS



For the first time, getting digital video into your Macintosh® has become a reality. VideoSpigot™ from SuperMac™ makes it easy. Practical. And, most important, affordable.

VideoSpigot is today's starting point for QuickTime™ moviemaking on any Macintosh—from the LC to the Quadra™ 900. It lets you pour footage from a TV, camcorder, laserdisc, or VCR right into your hard disk or optical cartridge, instantly turning each frame into digital data. Because VideoSpigot offers the industry's best QuickTime-compatible software video compression, it puts more video—with much higher image quality—on disk than any other product.

You can actually put as much as 30 seconds of video onto a 1.4 MB floppy disk—or an hour or more of footage on an optical disk or CD-ROM!

Its another industry breakthrough from SuperMac—"spigoted" video in QuickTime's file format. Video you can treat just like text and graphics. Video you can import into QuickTime-aware applications. Video capable of transforming presentations, storyboards, newsletters, and training materials into compelling, dynamic documents.

Starting at under \$500, VideoSpigot is the super-affordable way to get into QuickTime moviemaking. For true color and large-screen support, consider SuperMac's VideoSpigot Pro. See your Authorized SuperMac Reseller today, or call 1 (800) 334-3005 for the dealer nearest you.

 **SUPERMAC**
The SuperSource for Video



Apple, Macintosh, and QuickTime are trademarks of Apple Computer, Inc. Adobe Premiere is a registered trademark of Adobe Systems, Inc. and VideoSpigot are trademarks of SuperMac, Inc.

Like to shop at the

The original mail-order source for Macintosh products. Since 1984. 1991 Macworld World Class Award Nominee for Best Customer Support-Software.

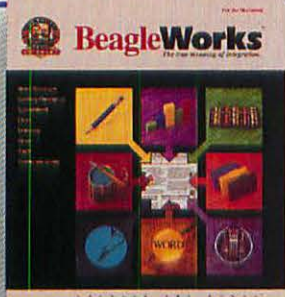
System 7 Video: Featuring Macworld Contributing Editor Lon Poole. Free when you order Apple's System 7 for \$99 (1074). Or buy one for just \$9 (2244). We also have Lon's book *Macworld Guide to System 7* for \$19 (2238).

Products preceded by ⑦ are compatible with **System 7**. For specific features of System 7, please ask when placing your order.

Companies participating in the 30 or 60 day **Money Back Guarantee** program are highlighted with ★. If you are not satisfied with your purchase of any MBG item, call us for an authorization and return it with all of the original packaging within the guarantee period for a refund check (or credit on your credit card). We reserve the right to limit quantities on returns.

We carry only the very **latest versions** of products. For products or versions not yet released at press time we've indicated the expected availability dates as supplied to us by the manufacturers. Also, all software is not copy-protected, unless indicated otherwise by (CP).

Corporate Accounts welcome. Bids and P.O.'s accepted. Please call 800/800-3333 for information.



★ **Beagle Bros. ... 30 day MBG**
3119 ⑦ **BeagleWorks**—Integrated word processor, spreadsheet, database, paint, communications & draw modules all in one package. Lets you combine data from other modules & make changes without leaving that document. \$185.

COMPUTERS

MacConnection is the exclusive mail-order reseller for Outbound Notebook Systems.

Outbound Systems, Inc.

Full line and accessories available. All units listed below include a 1.4 Floppy Drive, a slip case & universal power supply.

- 4165 ⑦ Outbound Notebook 2000/240 (68000, 2 MB, 40 MB Hard Drive) ... 2599.
- 4167 ⑦ Outbound Notebook 2000/440 (68000, 4 MB, 40 MB Hard Drive) ... 2699.
- 4169 ⑦ Outbound Notebook 2030/440 (68ec030, 4 MB, 40 MB Hard Drive) ... 2999.
- 4170 ⑦ Outbound Notebook 2030/441 (same as 2030/440, incl. math copro) ... 3149.
- 4172 ⑦ Outbound Notebook 2030/460 (68ec030, 4 MB, 60 MB Hard Drive) ... 3399.



- ★ **Chipsoft & SoftStream ... 30 day MBG**
- 8279 ⑦ **MacInTax Personal Edition 1991 & HyperTax Tutor**—America's best selling tax software for the Mac with HyperTax Tutor, to answer your tax questions & teach you fundamental tax-saving strategies. Prepare your return the same way a tax expert would—without any extra hourly fees. MacInTax is the Editor's Choice of MacUser (2/89) & winner of the 1990 Macworld World Class Award. Selected state packages are also available. \$99.
- 8059 ⑦ **MacInTax Personal Edition 1991** ... 59.
- 8175 ⑦ **HyperTax Tutor** ... 49.
- ⑦ **MacInTax State Tax Packages** ... ea. 42.

- 4174 ⑦ **Outbound Notebook 2030/461** (same as 2030/460, incl. math copro) ... 3549.
- 4175 Extra 12V Battery ... 59.
- 4177 Notebook Carrying Case ... 79.

DAILY BUSINESS ACCOUNTING, DATABASES, SPREADSHEETS, WORD PROCESSING

- A Lasting Impression**
- ⑦ **ResumExpert** or Cover Letters ... ea. 48.
- ⑦ **ResumExpert Software Series** ... ea. 48.
- Abacus Concepts**
- 4482 ⑦ **StatView SE+ Graphics 1.04** ... 219.
- 4138 ⑦ **StatView Student 1.0** ... 75.
- 4481 ⑦ **StatView II or 5840 ⑦ SuperANOVA** ... 309.
- ★ **Aclus ... 30 day MBG**
- 4024 ⑦ **4th Dimension 2.2 Runtime (4-user)** ... 249.
- 5618 ⑦ **4th Dimension 2.2** ... 479.
- ★ **Advanced Software ... 30 day MBG**
- 5608 ⑦ **DocuComp 1.5** ... 89.
- Amaze, Inc.**
- 3582 ⑦ **The Far Side Computer Calendar** ... 45.
- ★ **Avery ... 60 day MBG**
- 7446 ⑦ **MacLabel Pro 1.5** ... 48.
- ★ **Banner Blue ... 30 day MBG**
- 3548 ⑦ **Org Plus Advanced 1.0** ... 125.



Lotus Development

3606 ⑦ **1-2-3 for the Mac**—Takes full advantage of the Mac. Directly manipulate & format all data, text, & graphics. Offers true 3D worksheets & Excel & 1-2-3 file compatibility \$349.

3604 ⑦ **1-2-3 Competitive Upgrade** ... 99.

- ★ **Baseline Publishing ... 30 day MBG**
- 8881 ⑦ **Thunder 7 1.0.4** ... 56.
- ★ **Beagle Bros. ... 30 day MBG**
- 3119 ⑦ **BeagleWorks** ... 185.
- 3563 ⑦ **BeagleWorks Upgrade** ... 95.
- ★ **Checkfree Corp. ... 30 day MBG**
- 6928 ⑦ **Checkfree Mac 1.5** ... 19.
- ★ **CheckMark Software ... 60 day MBG**
- 5862 ⑦ **Payroll 4.5** ... 175.
- 5863 ⑦ **MultiLedger 2.0** ... 235.
- 3767 ⑦ **MultiLedger/MultiUser 2.0** ... 359.
- ★ **Chipsoft ... 30 day MBG**
- 3849 ⑦ **Short Form (for 1040A & 1040EZ filers)** ... 25.
- 8059 ⑦ **MacInTax Personal Edition 1991** ... 59.
- 8279 ⑦ **MacInTax Personal Ed./HyperTax Tutor** ... 99.
- ⑦ **MacInTax State Tax Packages** ... ea. 42.
- ★ **Claris ... 30 day MBG**
- 1129 ⑦ **MacWrite II 1.1V2** ... 136.
- 8216 ⑦ **FileMaker Pro 1.0V2** ... 209.
- 3531 ⑦ **Claris Resolve 1.0** ... 279.
- 1125 ⑦ **MacProject II 2.5V1** ... 349.
- 3903 ⑦ **ClarisWorks 1.0 (special 'til 2/28/92)** ... 149.
- ★ **Dow Jones ... 30 day MBG**
- 5295 **Dow Jones News Retrieval** ... 24.
- 1942 ⑦ **Market Analyzer Plus 2.01** ... 225.
- ★ **ElseWare Corp. ... 30 day MBG**
- 1506 ⑦ **DataShaper 1.2** ... 135.
- ★ **Essential Software ... 30 day MBG**
- 4086 ⑦ **Easy Alarms 1.1** ... 31.
- Fox Software**
- 5572 ⑦ **FoxBASE +/Mac 2.01** ... 289.
- ★ **Franklin Software ... 30 day MBG**
- 7070 **Language Master 2.0** ... 45.
- ★ **Good Software ... 30 day MBG**
- 2527 ⑦ **REM's Property Manager** ... 339.
- ★ **Individual Software ... 30 day MBG**
- 9640 ⑦ **Resume Maker 1.0** ... 26.
- Informix**
- 4955 ⑦ **Wingz 1.1A** ... 245.
- ★ **Intuit ... 30 day MBG**
- 2507 ⑦ **Quicken 3.0** ... 42.
- ★ **Kaetron Software ... 30 day MBG**
- 8941 ⑦ **TopDown 3.0** ... 199.
- Lotus Development**
- 3606 ⑦ **1-2-3 for the Mac** ... 349.
- 3604 ⑦ **1-2-3 Competitive Upgrade** ... 99.
- ★ **Mainstay ... 30 day MBG**
- 7718 ⑦ **MacFlow 3.54** ... 188.
- ★ **MECA ... 60 day MBG**
- 2796 ⑦ **Managing Your Money 4.0** ... 99.
- ★ **Microlytics ... 60 day MBG**
- 9729 **Strunk & White's Elements of Style** ... 34.
- 7820 ⑦ **Random House Encyclopedia 1.0** ... 68.
- 7506 ⑦ **Inside Information 1.0** ... 68.

end of the week?



★Provus ... 60 day MBG

4582 **Panorama II 2.0.3**—Designed with enough power for small businesses & enough convenience for novice users. Includes Clairvoyance & command key equivalents to the Find/Select dialog. Now faster than ever. \$245.

★Microsoft ... 30 day MBG

2572	7 Schedule Plus 1.0	129.
2884	7 Works 2.00E	159.
4902	7 Word 5.0 (Dec. '91)	299.
9803	7 Excel 3.0	309.
1420	7 Excel 3.0 Companion Book	20.
2565	7 Project 1.1	449.
5454	7 The Microsoft Office 1.5	479.

★New Era ... 30 day MBG

3130	7 nuBASE 1.3	179.
5048	7 EndLink 1.13	58.
4602	7 EndNote 1.4	85.
8010	7 EndNote Plus 1.1	145.

★Nolo Press ... 30 day MBG

4228	7 For the Record 2.0	30.
2981	7 WillMaker 4.0 (not valid in LA.)	35.

★Odesta ... 30 day MBG

5621	7 Double Helix 3.5	429.
	Paragon Concepts	
5683	7 Nisus 3.06	245.



★Teleware ... 30 day MBG

7616 **M.Y.O.B. 2.1**—Incredible, easy-to-use, accounting software for small- to medium-sized businesses. Features include fully integrated A/P, A/R, General Ledger, Inventory, Checkbook and Card File. System 7-savvy \$139.

★Portfolio Systems ... 30 day MBG

7992	7 DynoPage or 6916 7 Dynodex	ea. \$72.
	PowerUp ... 30 day MBG	
7696	7 Calendar Creator 1.01	44.
7694	7 Address Book Plus 2.0	63.
7698	7 Fast Forms 2.0	112.

★Provus ... 60 day MBG

4582	7 Panorama II 2.0.3	245.
------	---------------------	------

★Que Corp. ... 30 day MBG

7482	7 RightWriter for the Mac 3.1	54.
------	-------------------------------	-----

★Reality Technologies ... 30 day MBG

6929	7 WealthBuilder 1.02	95.
------	----------------------	-----

★Reference Software ... 30 day MBG

6268	7 Grammatik Mac 2.0	58.
------	---------------------	-----

★Round Lake Publishing

9946	7 LetterWorks, 9945 7 LetterWorks Sales 1.0, or 9947 7 LetterWorks Legal 1.0	ea. 45.
------	--	---------

★Shana ... 30 day MBG

8810	7 Informed Manager 1.2	99.
7692	7 Informed Designer 1.2	159.

★SoftStream ... 30 day MBG

8175	7 HyperFax Tutor	49.
------	------------------	-----

★Softsync, Inc. ... 30 day MBG

7129	7 Accountant, Inc. 2.1.2	339.
3828	7 Accountant, Inc./MultiUser 1.0	739.

★Software Toolworks

8366	7 Dollars & Sense 5.0	59.
------	-----------------------	-----

★Spyglass ... 60 day MBG

2033	7 Format 1.01	159.
2027	7 Transform 2.0 or 2028 7 Dicer 1.1	ea. 399.

★Survivor Software ... 30 day MBG

3289	7 MacMoney 3.52	59.
------	-----------------	-----

★Symantec ... 30 day MBG

2237	7 GreatWorks	199.
3422	7 More 3.1	2278 Upgrade
		99.

★Symmetry ... 30 day MBG

3131	7 Acta 7	75.
------	----------	-----

★Synergy ... 30 day MBG

6617	7 KaleidaGraph 2.1.3	150.
------	----------------------	------

★Teleware ... 30 day MBG

7616	7 M.Y.O.B. 2.1	139.
------	----------------	------

★TIMESLIPS ... 30 day MBG

2986	7 Timeslips III 2.0H	194.
8939	7 Accounting Link 1.0B	52.

★T/Maker ... 30 day MBG

3639	7 WriteNow 3.0 (Feb. '92)	155.
3508	7 The PowerBundle (with carry case)	159.

★Williams & MacLac ... 30 day MBG

4976	7 StickyBusiness 1.5	51.
6926	7 myDiskLabeler III 3.1	42.

★WordPerfect ... 60 day MBG

3800	7 WordPerfect Mac 2.03	279.
9865	7 (5 pack)	1195.
3090	7 WordPerfect Office 3.0 (single)	89.
3092	7 WP Office (5 pack)	295.
	3088 (20 pack)	895.

★Wordstar ... 30 day MBG

3554	7 American Heritage Dictionary	55.
6984	7 Correct Grammar 2.0	59.

★Wyoming Software ... 30 day MBG

3557	7 Business Plan Toolkit 4.0	95.
3555	7 Business Sense 1.4.1	125.

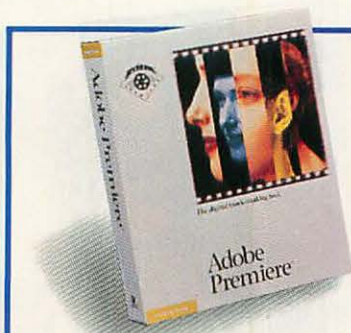
GRAPHICS & DESIGN PUBLISHING, PRESENTATIONS

★Abracadata, Ltd. ... 30 day MBG

9995	7 Instant Decorator 1.1	29.
9990	7 Design Your Home - Architecture, 9992 Interiors, or 9994 Landscape	ea. 63.

Adobe Systems

	7 Adobe Type Library (Vol. 1-230)	call
--	-----------------------------------	------



Adobe Systems

4145 **Adobe Premiere 1.0**—Easily combines video footage, audio recordings, animation, still images and graphics to create high-quality digital movies. Takes advantage of Apple's QuickTime media-integration technology \$309.

8794	7 Adobe Type On Call	47.
6957	7 Adobe Type Reunion 1.02	41.
5750	7 Adobe Type Manager 2.0	59.
6053	7 Adobe Plus Pack 2.0	118.
6156	7 Adobe Plus Pack/ATM	174.
6098	7 TypeAlign for ATM 1.0.4	62.
6671	7 Adobe Type Set 1 or 6677 7 Set 2	62.
7587	7 Adobe Type Set 3	125.

Adobe Type Sets for Business:

2221	7 Letters, Memos & Faxes	95.
2223	7 Invitations & Awards	95.
2219	7 Spreadsheets & Graphs	95.
2222	7 Overheads & Slides	95.
8171	7 Adobe Illustrator 3.2 (with ATM)	369.
6644	7 Adobe Photoshop 2.0	549.
5001	7 Streamline 2.0	122.
4145	7 Adobe Premiere 1.0	309.

★Aldus ... 30 day MBG

2461	7 Aldus Gallery Effects 1.0	129.
3506	7 Aldus SuperPaint 3.0	133.
6674	7 Aldus Personal Press 1.01	195.



★Abracadata, Ltd. ... 30 day MBG

9990 **Design Your Own Home-Architecture**—Modify or design the home of your dreams! Includes a library of architectural objects and sample floor plans. Everything you need to create professional drawings or a simple sketch \$63.

370C

MMG
of the Group—Marketing Communications, Inc.

MacConnection®

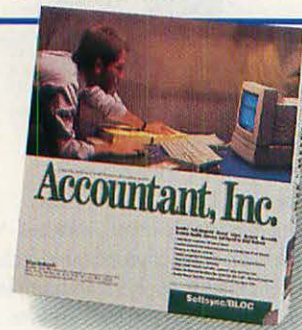
14 Mill Street, Marlow, NH 03456 603/446-7711 FAX 603/446-7791

We have just the



★ **Expert Software ... 30 day MBG**
4870 **Expert Color Paint 1.0**—New! The latest in painting tools at an incredible price. You get hot 32-bit color, image editing, and tools that may be customized, anti-aliasing, virtual memory and System 7 support \$29.

3980	7 Aldus Digital Darkroom 2.0	259.
3507	7 Aldus Super 3D 2.5	325.
7467	7 Aldus PrePrint 1.5	325.
4751	7 Aldus Persuasion 2.0	325.
1330	7 Aldus FreeHand 3.1 (Dec. '91)	395.
7088	7 Aldus PageMaker 4.2 (Dec. '91)	495.
8054	7 Aldus Design Team (best buy, includes PageMaker, FreeHand & PrePrint)	859.
Altsys		
9806	7 Metamorphosis Pro 2.01	89.
1983	7 EPS Exchange 1.0	89.
1195	7 Fontographer 3.3	265.
★ Ares Software ... 30 day MBG		
8878	7 FontMonger 1.05	62.
★ Baseline Publishing ... 30 day MBG		
8055	7 Screenshot 1.2	34.
7784	7 Color MacCheese 2.0.8	56.
7828	7 Exposure Pro 1.0.2	78.
Bitstream		
9428	7 True Type Fonts 1 or 9429 Fonts 2	ea. 59.
1591	7 True Type Fonts 3 or 1595 Fonts 4	ea. 98.
Broderbund Software		
3572	7 Kid Pix 1.2	34.
1427	7 The Print Shop 1.3.2	35.
6281	7 TypeStyler 2.0 (with ATM, Dec. '91)	127.
★ Casady & Greene ... 30 day MBG		
8879	7 Fluent Font Library 4.05	99.
1945	7 True Type Starter Set	57.



★ **SoftSync, Inc. ... 30 day MBG**
7129 **Accountant, Inc. 2.1.2**—Comprehensive, fully-integrated accounting software that includes General Ledger, Receivables, Payables, Inventory, Invoicing, Payroll, Check Writing & more \$339.
3828 **Accountant, Inc./MultiUser 1.0** 739.

★ Claris ... 30 day MBG		
1123	7 MacPaint II 2.0	\$88.
2518	7 MacDraw Pro 1.0	279.
8007	7 Claris CAD 2.0	629.
Custom Applications		
8037	7 Freedom of Press Light 3.01 (17 fonts)	55.
★ DeltaPoint ... 60 day MBG		
3558	7 DeltaGraph Pro (Dec. '91)	209.
★ Deneba Software ... 30 day MBG		
3227	7 Canvas 3.0	249.
★ Expert Software ... 30 day MBG		
4870	7 Expert Color Paint 1.0	29.
★ Foundation Publishing ... 60 day MBG		
6728	7 Comic Strip Factory 1.6	36.
IDD/Innovative Data Design		
2417	7 MacDraft 2.1	279.
4707	7 Dreams 1.10	special 349.
★ Letraset ... 30 day MBG		
2619	7 ImageStudio 1.5	139.
4709	7 LetraStudio 2.0 (Dec. '91)	139.
2621	7 Ready Set Go! 4.5A	165.
6300	7 FontStudio 2.0	359.
6302	7 DesignStudio 2.0	489.
6301	7 ColorStudio 1.5	599.
★ Lingvist's Software ... 60 day MBG		
Over 100 language fonts		call
2636	MacKanjii 6.0	79.
2638	LaserCyrillic 1.0	99.



★ **Deneba Software ... 30 day MBG**
3227 **Canvas 3.0**—Award-winning precision drawing program featuring Bezier font outlines, professional word-processor-like text capabilities, object blending, a freehand Bezier curve tool, Smart Mouse drawing aid, and more... \$249.

★ MacroMind•Paracomp ... 30 day MBG		
3148	7 Magic 1.0 (Dec. '91)	279.
5028	7 ModelShop 2.0	599.
	7 SwivelArt (Map & Viewpoint art)	ea. 89.
7441	7 Swivel 3D Professional 2.0	435.
3450	7 SwivelMan 1.0	599.
3440	7 QuickPICS 1.0	99.
★ Mainstay ... 30 day MBG		
9798	7 Capture 4.0	82.
★ MicroFrontier ... 30 day MBG		
3013	7 Color It! 1.0	75.
7886	7 Enhance 2.0	235.
★ MicroMaps ... 30 day MBG		
7556	7 MapArt (PICT) or 7555 (EPS)	ea. 89.
★ Microsoft ... 30 day MBG		
2878	7 PowerPoint 2.01E	245.
★ Monotype Typography ... 30 day MBG		
	7 Monotype Imprints-TrueType	ea. 22.
	7 Classic Fonts (full line available)	call
Postcraft International		
2210	7 Effects Specialist 1.04	95.
	7 Layouts for PageMaker, ReadySetGo, & QuarkXPress	ea. 69.
	7 Layouts: Stationery or Flyers	ea. 45.
Quark		
7612	7 QuarkXPress 3.1 (Dec. '91)	569.



★ **Specular International ... 30 day MBG**
4962 **Infini-D 1.1**—An integrated 3D modeling, 32-bit rendering, & 3D animation package. A powerful 3D environment to create images and present ideas. Features: anti-aliasing, shadowing, 3D texture mapping, noise, & shading... \$649.

★ Specular International ... 30 day MBG		
4962	7 Infini-D 1.1	649.
★ Splnaker ... 30 day MBG		
3530	7 Certificate Maker 2.02	22.
Strata		
7773	7 Stratavision 3D 2.0	629.
★ SuperMac Tech. ... 60 day MBG		
3380	7 PixelPaint 2.1	149.
	7 5625 Pro	459.
3G Graphics		
3942	7 Images with Impact: Graphics 1	49.
4583	7 Business 1	64.
6379	7 Accents & Borders I	64.
★ Timeworks ... 30 day MBG		
7115	7 Publish It! Easy 2.12 with File-It!	154.
★ T/Maker ... 30 day MBG		
Full line available.		
	7 ClickArt (bitmapped)	ea. 32.
	7 ClickArt (EPS format)	ea. 82.
1292	7 Color Graphics Presentation 1.0	109.
Virtus Corporation ... 30 day MBG		
4488	7 WalkThrough 1.03	249.
★ Visual Business Sys. ... 30 day MBG		
9867	7 GraphMaster 1.1	189.
★ Zedcor ... 60 day MBG		
3986	7 DeskPaint & DeskDraw 3.0.7	113.

PROGRAMMING UTILITIES, HYPERCARD, SECURITY

★ Abbott Systems ... 30 day MBG		
2515	7 Calc+ 1.0	39.
5236	7 CanOpener 2.0	62.
★ Advanced Software ... 30 day MBG		
8051	7 Intouch 1.1	39.
2808	7 QuickTools 1.0	45.
After Hours Software		
1352	7 TouchBASE 2.0	79.
★ Aladdin Systems ... 30 day MBG		
6169	7 Shortcut 1.5	45.
6740	7 StuffIt Deluxe 3.0 (Jan. '92)	62.
★ Aldus ... 30 day MBG		
5100	7 Aldus SuperCard 1.6 (Dec. '91)	195.
★ ALSoft ... 30 day MBG		
9808	7 MasterJuggler 1.57	25.
9807	7 DiskExpress II 2.07	49.
9886	7 MultiDisk 1.27	49.
★ Alysis Software ... 30 day MBG		
2687	7 SuperDisk! 2.0	49.
Apple Computer		
1074	7 System 7 (with free PCTV video)	99.
★ ASD Software ... 30 day MBG		
9440	7 MaccessCard Reader (reqs. FileGuard)	299.
9439	7 MaccessCard/FileGuard (1) Bundle	399.

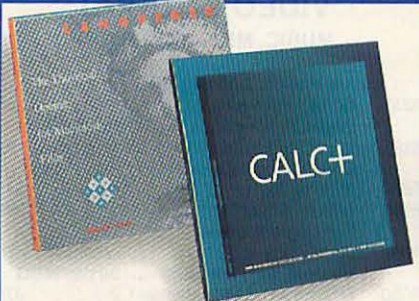
service you seek.



★ASD Software ... 30 day MBG
MaccessCard Reader combined with FileGuard 2.7 secures your Mac against unauthorized users.
7085 **FileGuard 2.7 (1 user)**... \$139.
9440 **MaccessCard Reader (reqs. FileGuard)**... 299.
9439 **MaccessCard/FileGuard (1) Bundle**... 399.

7085	FileGuard 2.7 (1 user) (Dec. '91)	139.
7422	(5 user) ... 489. 7423 (10 user) ... 799.	
★Baseline Publishing ... 30 day MBG		
7783	INIT Manager 1.1	34.
3114	INIT Info	39.
★Berkeley Systems ... 30 day MBG		
5737	After Dark 2.0V	28.
2198	More After Dark (M.A.D.)	23.
2196	After Dark & M.A.D. Bundle	42.
1541	Stepping Out II 2.02	49.
Bright Star Technology		
2614	At Your Service 1.0	30.
3994	Catalog of Actors (six)	55.
★Casady & Greene ... 30 day MBG		
2269	QuickDEX 2.3 ... 22. 2528 (5 Pak)	99.
4485	Crash Barrier 1.0	45.
★CE Software ... 60 day MBG		
1727	CalendarMaker 3.0.1	31.
6278	DiskTop 4.01 or 3376 Tiles 1.0	ea. 63.
7518	Alarming Events 1.03	84.
8024	QuickKeys 2.1	94.
★Central Point ... 30 day MBG		
5041	Mac Tools Deluxe 1.2	79.
★Claris ... 30 day MBG		
8734	HyperCard Development Kit 2.1	139.
★Connectix ... 30 day MBG		
7830	Maxima 2.0.1	45.
6647	HandOff II 2.2.1	56.
★Cyan ... 30 day MBG		
2715	Peacock 2.0 (for HyperCard)	43.
★Dantz Development ... 30 day MBG		
5255	Retrospect 1.3	147.
7945	Retrospect Remote 1.3	264.
7946	Remote (10 Pak) ... 147. 3112 (50 Pak)	649.
3393	DiskFit Pro 1.0	74.
Dubl-Click Software		
7974	ClickChange 1.05.2	56.
1824	Calculator Construction Kit 2.09.6	62.
★ElseWare Corp. ... 30 day MBG		
1507	Bar Code Kit 1.0d	135.
4871	Checklist 2.0	135.
★Fifth Generation ... 30 day MBG		
4287	PYRO! 4.01	25.
3955	Suitcase II 1.2.11	53.
8286	SuperLaserSpool 2.02	100.
5178	FastBack Plus or 5725 DiskLock	ea. 127.

★Go Technology ... 60 day MBG		
2966	Hot Keys System 7.0 Finder	\$21.
★ICOM Simulations ... 30 day MBG		
3731	OnCue II 2.0	56.
★Insight Development ... 30 day MBG		
6171	MacPrint 1.23	93.
1296	Mosaic 1.0 (3 user)	249.
★JAM Software USA ... 30 day MBG		
6089	Smart Alarms with Appt. Diary 3.0.7	63.
★Kensington ... 30 day MBG		
9301	PassProof (right) or 9300 (left)	ea. 65.
2011	PassProof Classic or 1632 IIs	ea. 65.
★Kent Marsh Ltd. ... 30 day MBG		
9513	FolderBolt 1.02	73.
2591	The NightWatch 1.03	84.
9779	GuardCard SE or 9951 SE/30	ea. 106.
★Kiwi Software ... 60 day MBG		
6267	Kiwi ENVELOPES! 3.1.3	32.
3518	Kiwi POWER WINDOWS	50.
★Magic Software ... 30 day MBG		
7268	POWERIcons or 7267 AutoSave II	ea. 26.
7270	Backmatic 2.01	50.
★Microcom ... 30 day MBG		
8562	Complete Undelete 1.1	48.
4803	Virex 3.5	57.
8561	911 Utilities or 2462 Citadel w/Shredder	89.



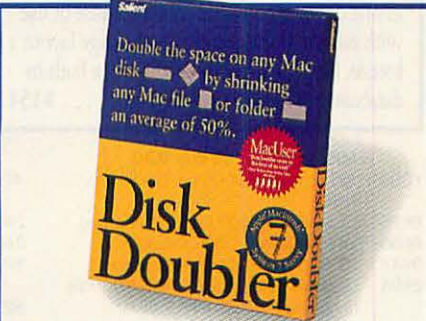
★Abbott Systems ... 30 day MBG
5236 **CanOpener 2.0**—Universal file opener. Browse & copy any file, even damaged ones! \$62.
2515 **Calc+ 1.0**—Professional replacement for Apple's calculator. Large display, paper tape printout, % key, DTP calculations ... 39.

MicroMat Computer Systems		
2810	MacEKG 1.0.9	63.
★ Microseeds Pub. ... 60 day MBG		
7068	INITPicker 2.02	34.
2913	Redux, 7116 Rival or 2936 HAM	ea. 49.
★ Microsoft ... 30 day MBG		
4471	QuickBasic 1.0	64.
★ Nine to Five Software ... 30 day MBG		
9767	Reports 2.1	94.
★ Now Software ... 30 day MBG		
6925	Now Utilities 3.1	84.
★ ON Technology ... 1 year MBG		
6385	On Location 2.0 (Dec. '91)	75.
9801	Meeting Maker (5)	309. 9800 (10) 549.
2570	Instant Update (2)	309. 2571 (5) 619.
★ Palomar Software ... 30 day MBG		
8210	PLOTTERgeist 2.0	249.
★ Salient Software ... 30 day MBG		
7404	DiskDoubler 3.7	49.
4838	AutoDoubler 1.0	49.



★Microcom ... 30 day MBG
Complete disk and file recovery and protection.
8561 **911 Utilities 1.0**... \$89.
4803 **Virex 3.5**... 57.
2462 **Citadel with Shredder 1.0**... 89.
8562 **Complete Undelete 1.1**... 48.

★Solutions, Inc. ... 60 day MBG		
3448	SmartScrap & The Clipper 2.1	56.
★Symantec ... 30 day MBG		
5176	Symantec AntiVirus for Mac (SAM)	66.
5724	Symantec Utilities for Mac (SUM II)	96.
6748	Norton Utilities for the Mac 1.1	87.
3598	Norton Utilities & SAM Bundle	118.
3421	THINK Pascal 165. 2688 THINK C	199.
9957	THINK Reference 1.0	69.
★Tactic Software ... 30 day MBG		
8964	MasterFinder 1.2	49.
★TGS Systems ... 60 day MBG		
6667	Prograph 2.5	309.
★Thought I Could ... 30 day MBG		
4843	Wallpaper 1.0	34.
★Visionary Software ... 30 day MBG		
3889	Lifeguard 1.0.2 or 4845 MindSet 1.0	35.
3888	Synchronicity 3.0	35.
3887	First Things First 1.0.2	41.
★Wolfman Research ... 30 day MBG		
8273	Mathematica Enhanced 2.0	789.



★Salient Software ... 30 day MBG
7404 **DiskDoubler 3.7**—Because no disk is big enough, this latest System 7 Savvy version provides smaller compressed files, increased speed, simplified file backups, & self-expanding files. *Macworld 1991 World Class Award winner.* \$49.

370C

MMC
Mac Marketing Connection

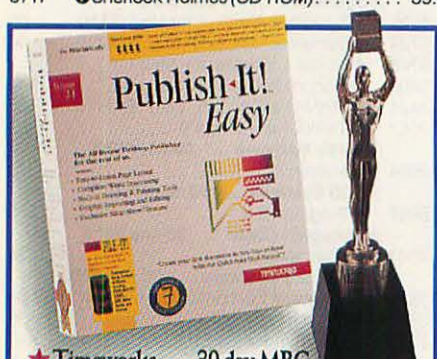
MacConnection®

14 Mill Street, Marlow, NH 03456 603/446-7711 FAX 603/446-7791

Call by noon Sunday.


CD-ROM

- Adobe Systems**
8794 **Adobe Type On Call CD/ATM** \$47.
CD Technology
2321 **CD-ROM Caddy** 11. 2533 (5) 49.
8057 **Porta Drive CD-ROM** 599.
4140 **Multimedia HANDisc (Dec. '91)** 75.
★ **Cyan ... 30 day MBG**
2717 **Cosmic Osmo 1.1 (CD-ROM)** 37.
★ **Discovery Systems ... 60 day MBG**
9967 **Nautilus (subscription, CD-ROM)** 20.
9968 **Birds of North America (CD-ROM)** 26.
9965 **Sherlock Holmes (CD-ROM)** 26.
9966 **Shakespeare on Disc (CD-ROM)** 26.
1874 **Mammals N. America (CD-ROM)** 52.
Dubi-Click
9944 **The WetSet CD (approx. 7000 images)** 218.
★ **Everex ... 30 day MBG**
1875 **Metro CD-ROM Drive 1.3** 469.
★ **Highlighted Data ... 30 day MBG**
7771 **Webster's Dictionary (CD-ROM)** 159.
★ **HyperGlot ... 30 day MBG**
7473 **Learn To Speak French (CD-ROM)** 62.
7829 **Learn To Speak Spanish (CD-ROM)** 62.
2615 **Lingua ROM II (3-CD Set)** 649.
★ **ICOM Simulations ... 30 day MBG**
3717 **Sherlock Holmes (CD-ROM)** 39.



★ **Timeworks ... 30 day MBG**
7115 **Publish It! Easy 2.12 with File-It!**—This all-in-one desktop publisher combines ease of use with advanced features that make page layout a breeze. Now includes the new File-It!, a built-in database and mail-merge program! \$154.

- ★ **Microsoft ... 30 day MBG**
6382 **The Microsoft Office (CD-ROM)** 479.
NEC
6625 **Clip-Art 3D (2500 full-color images)** 246.
6636 **Image Gallery (2800 line art)** 246.
9441 **CDR36 CD-ROM Portable Drive** 399.
2595 **General Reference CD-ROM Bundle (includes CDR36, kit & 7 titles)** 529.
Passport Designs
8255 **Music Creativity Kit CD** 189.
8607 **Music Production Kit CD** 1199.
★ **Penton Overseas ... 30 day MBG**
2611 **Vocabulair/ce 2.0 Spanish 1 CD** 69.
2610 **Vocabulair/ce 2.0 French 1 CD** 69.
Pixar
3566 **Showplace/RenderMan CD** 449.
Software Toolworks
3915 **Grolier Encyclopedia (CD-ROM)** 249.
4397 **Time Table History (CD-ROM)** 57.
★ **Tactic Software ... 30 day MBG**
2519 **Tactic Multi-Media CD** 149.
★ **Voyager ... 30 day MBG**
3921 **Mozart Dissonant Quartet CD** 39.
3917 **A Silly, Noisy House CD** 39.
3919 **AmandaStories CD (Jan. '92)** 39.



★ **Synergy Software ... 30 day MBG**
6618 **VersaTerm 4.6**—Cost effective TCP/IP Telnet networking & FTP (client/server) file transfer services are included with our award winning terminal emulation applications. \$90.
6619 **VersaTerm-PRO 3.6** 177.

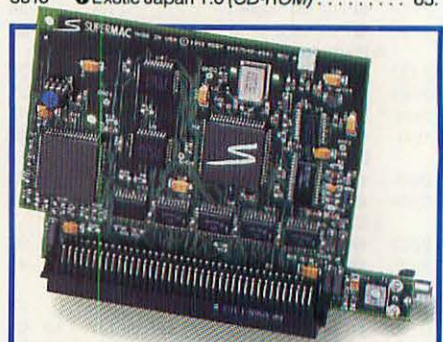
VIDEO & SOUND MUSIC, MIDI, ANIMATION

- ★ **Ars Nova ... 30 day MBG**
1215 **Practica Musica 2.2** 66.
★ **Bogas Productions ... 60 day MBG**
6135 **Super Studio Session with Music Library** 99.
Coda Music Systems
5604 **Finale 2.6.1** 549.
8188 **MusicProse 2.1** 299.
Full Logic Studios
1163 **Mac-Sound (241 great sound effects)** 79.
★ **MacroMind•Paracomp ... 30 day MBG**
9353 **MacroMind MediaMaker 1.2** 479.
6159 **MacroMind Accelerator 3.0** 135.
5087 **MacroMind Director 3.0** 689.
2246 **MacroMind Three-D 1.0** 1029.
7839 **FilmMaker 2.0.1** 435.
2199 **MacRecorder Sound System 2.0.5** 174.
Mass Microsystems
2592 **QuickImage 24** 289.
Passport Designs
8253 **TRAX 2.2** 57.
9442 **Audio TRAX 1.0** 209.
3117 **Master Tracks PRO 4 4.5** 315.
8250 **Encore 2.07** 379.
3115 **MIDI Interface** 79.



Pixar
3566 **Showplace & MacRenderMan CD-ROM**—Complete with: Showplace & MacRenderMan applications, access to on-line documentation, and a gallery of images and animations. \$449.
1596 **Showplace & MacRenderMan Bundle** 649.

- PCTV**
2244 **System 7 Video with Lon Poole (VHS)** \$9.
2245 **System 7 Video with Lon's Book** 25.
Pixar
1596 **ShowPlace/MacRenderMan Bundle** 649.
RasterOps
8526 **Video Expander** 499.
7457 **Video ColorBoard 364** 699.
3224 **Expresso Slide Scanner** 699.
9784 **RasterOps 24SI** 649. 8944 **24STV** 1249.
★ **Sound Source ... 30 day MBG**
3547 **Star Trek: The Logical Collection** 29.
3607 **Star Trek: The Final Frontier** 29.
4920 **Star Trek: The Bundle (I gotta have both!)** 49.
★ **SuperMac Tech. ... 60 day MBG**
1813 **Color Calibrator** 499.
1844 **Spectrum/8 Series III** 559.
1851 **Spectrum/24 Series III** 2099.
1877 **Spectrum/8LC or 2026 S/8si** ea. 559.
2330 **Spectrum/8-24 PDQ or 2231 PDQsi** ea. 999.
4122 **VideoSpigot LC or 4114 VS IIsi** ea. 349.
4164 **VideoSpigot (for NuBus)** 419.
★ **Symmetry ... 30 day MBG**
8172 **Mariah 1.0** 93.
★ **Voyager ... 30 day MBG**
9322 **Voyager Videostack 2.2** 65.
9328 **Voyager CD Audiostack** 65.
9326 **Beethoven or 9327 Stravinsky** ea. 65.
3316 **Exotic Japan 1.0 (CD-ROM)** 65.

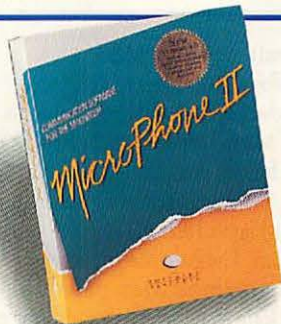


★ **SuperMac Tech. ... 60 day MBG**
VideoSpigot—Digital-video frame grabber for making QuickTime movies. Includes free copy of Adobe Premiere thru 1/31/92.
4122 **VideoSpigot LC or 4114 VS si** \$349.
4164 **VideoSpigot (for NuBus)** 419.

LEARN & PLAY FOREIGN LANGUAGES, TRAINING, GAMES

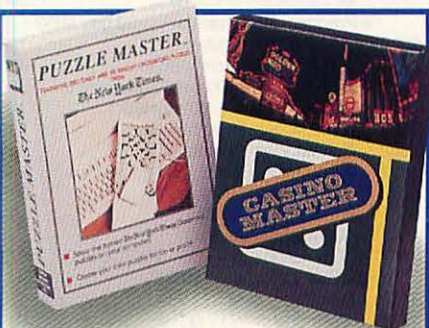
- Accolade**
1423 **Hard Ball II or 8217 Ishido** ea. 31.
8220 **Jack Nicklaus Golf** 34.
★ **Aldus ... 30 day MBG**
3503 **Dark Castle** 34.
3502 **Beyond Dark Castle** 34.
★ **Baseline Publishing ... 30 day MBG**
7785 **Talking Moose 4.0** 23.
★ **Beacon Technology ... 30 day MBG**
4967 **HyperBible (KJV) or 4968 (NIV)** ea. 125.
Broderbund Software
4314 **Typel 1.0** 18.
6516 **The Playroom (CP) (color)** 29.
6384 **Carmen Sandiego Series (CP)** ea. 29.
9804 **PlayMaker Football (color)** 29.
9804 **RoboSport or 8195 BannerMania** ea. 35.
3562 **Patton Strikes Back** 35.
3559 **SimAnt** 35.
8266 **SimEarth 1.0** 40.
4966 **SimCity (CP)** 29. 5871 **Supreme** 47.

Get it on Monday.



★ **Software Ventures ... 30 day MBG**
 3455 **MicroPhone II 4.0**—The only telecommunications software that's System 7-savvy with Publish and Subscribe, Apple Events, Connection Manager, IAC & Balloon Help. Works with PowerBooks & Quadras. VT220/320 added \$215.

- ★ **Carina Software ... 30 day MBG**
 5726 **Voyager 1.2** 87.
 ★ **Casady & Greene ... 30 day MBG**
 4119 **Crystal Quest with Critter Editor 2.2x** ... 29.
 7495 **Mission Starlight or 7498 Sky Shadow** ... 29.
 3343 **Aqua Blooper Piper 1.0** 29.
 3342 **Fun Bundle (includes Crystal Quest w/CE, Sky Shadow & Mission Starlight)** 59.
 4960
 ★ **Centron Software ... 30 day MBG**
 2707 **Puzzle Master** 26.
 8525 **Casino Master (B&W) 41. 8524 (Color)** 45.
 ★ **Davidson & Assoc. ... 30 day MBG**
 3922 **Talking Spell It Plus** 29.
 6128 **MathBlaster Mystery** 29.
 2574 **MathBlaster Plus** 35.
 8278 **Alge-Blaster Plus** 35.
 3923 **Personal Trainer SAT** 35.
 ★ **Deadly Games ... 30 day MBG**
 2811 **Bomber 2.22** 31.
 3460 **Battle of Britain II (Dec. '91)** 31.



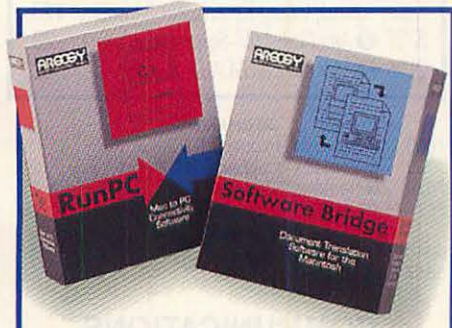
★ **Centron Software ... 30 day MBG**
 2707 **Puzzle Master**—Incl. 200 Daily/50 Sunday Puzzles from NY Times, or create your own \$26.
Casino Master—Incl. Blackjack, Craps, Roulette, Video Poker, Baccarat. Exact simulations.
 8525 **B&W 3.24 41. 8524 Color 4.1 45.**

- EARTHQUEST**
 3118 **EARTHQUEST Ecology 1.0** \$34.
 8050 **EARTHQUEST 2.0** 39.
Electronic Arts
 6716 **Pipe Dream 1.2** 17.
 1303 **Loom 1.0** 29.
 8194 **Armor Alley 1.0.1** 32.
 8643 **Harpoon** 39.
 1907 **PGA Golf or 2963 Starlight II 1.0** ea. 39.
 2962 **Harpoon Challenger Pak** 59.
 3385 **Secret of the Silver Blades** 39.
FTL/Software Heaven
 1555 **oids 1.0** 25.
 ★ **Great Wave ... 30 day MBG**
 2276 **Kid's Time 1.3** 25.
 5642 **Kid's Math 1.1** 25.
 4334 **NumberMaze** ... 25. 8527 **(Color)** ... 35.
 8044 **NM Decimals & Fractions (Color)** 35.
 1517 **ReadingMaze** ... 25. 1513 **(Color)** ... 35.
 ★ **HyperGlot Software ... 30 day MBG**
Word Torture 4.0—Beginner to Advanced (Span., Fren., Germ., Ital. & Rus.) ... ea. 35.
Pronunciation Tutor - Beginner (Span., Fren.) ... ea. 35. (Germ., Chin.) ... 39.
Verb Tutor - Intermediate (Spanish, French, German) ea. 39.
Tense Tutor 2.0 (Spanish, French, German, Italian) ... ea. 39.
Survival Manual (Span., Fren., Germ., Ital., Chin. & Rus.) ea. 39.
 ★ **Inline Design ... 30 day MBG**
 1562 **3 in Three** 31.
 1944 **Swamp Gas** 31.
 8809 **Tesseract (addictive puzzle)** 31.
 7622 **Darwin's Dilemma 2.0 (Dec. '91)** 31.
 3414 **Mutant Beach (Dec. '91)** 44.
Interplay Productions
 1894 **BattleChess (3D animation)** 29.
 3520 **Dvorak on Typing (Dec. '91)** 29.
 1893 **CheckMate (infinite play levels)** 31.
 3534 **Castles 1.0 (Feb. '92)** 34.
 ★ **Learning Company ... 30 day MBG**
 2670 **Reader Rabbit 3.0 (CP) (ages 4-7)** 34.
 3272 **Outnumbered 1.0** 34.
 3281 **The Writing Center 1.0** 51.
 ★ **Leister Productions ... 30 day MBG**
 7126 **Reunion 3.0** 115.
Mallard Software
Scenery Disks 1-4 Flight Simulator ea. 30.
 ★ **MECC ... 30 day MBG**
 3963 **Oregon Trail 1.0** 28.
 3960 **Number Munchers 1.2** 28.
 3959 **Word Munchers 1.2** 28.
 4095 **Super Munchers 1.0** 28.
Micro League Sports
 4961 **Basketball** 29.
 4936 **Baseball** 29. 4946 **Football** 29.
 ★ **Microsoft ... 30 day MBG**
 2868 **Flight Simulator 4.0 (CP)** 43.
 ★ **Mysterium Tremendum ... 30 day MBG**
 5841 **Moriarty's Revenge 1.03** 32.
 ★ **Nordic Software ... 30 day MBG**
 8258 **Turbo Math Facts 1.1** 25.
 8257 **PreSchool Pack - Color 1.0** 35.
 2716 **Word Search Deluxe 1.0** 35.
 8260 **Word Quest 1.0** 30.
 4087 **Christmas Pack 1.0** 30.
 ★ **Penton Overseas ... 30 day MBG**
VocabuLearn/ce Levels I & II (Span., Fren., Germ., Ital., Rus., Japan., & Heb.) ... ea. 35.
VocabuLearn/ce Level III (Span., Fren., Germ., Ital., Rus., & Japan.) ea. 35.



★ **Microcom ... 30 day MBG**
Carbon Copy Mac 2.0—A best value in remote control. Direct another Mac's screen, keyboard, & mouse from anywhere. Single user for remote access (2 copies req.); unlimited users for networks. 7459 (single) ... \$59. 1556 (unlimited) ... \$179.

- PICTURE-IT! (Spanish, French, German, & Italian)** ea. 40.
 ★ **Personal Training Sys. ... 60 day MBG**
Basic Macintosh (modules 1-4) ... ea. 62.
Converting 6.0 to 7.0 (modules 1-2) ea. 62.
Excel 2.2, 3.0 (modules 1-9) ea. 62.
FileMaker Pro (modules 1-5) ea. 62.
FreeHand 3.0 (modules 1-5) ea. 62.
HyperCard 1.0, 2.0 (modules 1-4) ea. 62.
PageMaker 4.0 (modules 1-6) ea. 62.
Persuasion 2.0 (modules 1-4) ea. 62.
QuarkXPress 3.0 (modules 1-4) ... ea. 62.
System 7 (new users) (modules 1-3) ea. 62.
Word 4.0 (modules 1-4) ea. 62.
Works 2.0 (modules 1-4) ea. 62.
Postcraft International
 6466 **Citadel 1.21** 26.
Sierra On-Line
 9733 **Hoyle's Book of Games II** 20.
 7367 **Space Quest III or 2522 IV** ea. 34.
 2523 **King's Quest V** 34.



★ **Argosy Software ... 30 day MBG**
 7872 **Software Bridge/Mac 2.0.1**—Translate documents between over 30 Mac and PC word processors. Mount DOS disks ... \$99.
 2448 **RunPC/Network**—Connect to a PC and run DOS programs. Incl. Software Bridge . 279.

370C

MMC

MacConnection®

1-800/800-3333

© Copyright 1991 PC Connection, Inc. MacConnection is a division and registered trademark of PC Connection, Inc., Marlow, NH. All other trademarks remain the property of their respective companies.

It's our latest Mac

Sir-Tech Software		
8228	Wizardry II: Knight of Diamonds	\$28.
8229	7 Bane of Cosmic Forge	35.
★SoftStream ... 30 day MBG		
4073	Colour Billiards	38.
3501	7 Classic Trilogy (Cribbage, Whist, Hearts)	50.
3472	7 Family Cards (Solitaire, Rummy, War)	50.
Software Toolworks		
4619	7 Mavis Beacon Typing 1.3 (CP)	32.
1908	7 World Atlas 1.0	52.
★Spectrum Holobyte ... 30 day MBG		
8180	7 Faces 1.0	14.
3464	7 Tetris 1.3 or 6112 7 Welltris 1.1	ea. 22.
3017	7 Wordtris 1.0 (Jan. '92)	25.
3459	7 Falcon 2.2.1 or 8181 7 Vette 1.0	ea. 33.
★Spinnaker ... 30 day MBG		
2328	Sargon IV 1.03 (CP) (chess)	28.
★Strategic Studies ... 30 day MBG		
8085	7 Panzer Battles 1.3.2	26.
2685	7 American Civil War 1.0	29.
3287	7 Warlords (empires at war)	31.
StudyWare		
	7 ACT, GMAT, GRE, or SAT Prep	ea. 29.
8098	7 LSAT Prep for the Mac 3.7	35.
Terrace Software		
8192	7 Mum's The Word 1.1A (gardening)	79.
9970	7 Mum's The Word Plus 1.01 (color)	107.



★Berkeley Systems ... 30 day MBG

2198 7 *More After Dark (M.A.D.)*—25 new displays for After Dark. Featuring Mowin' Man, Tunnel, Crazy Kittens, Art Museum \$23.

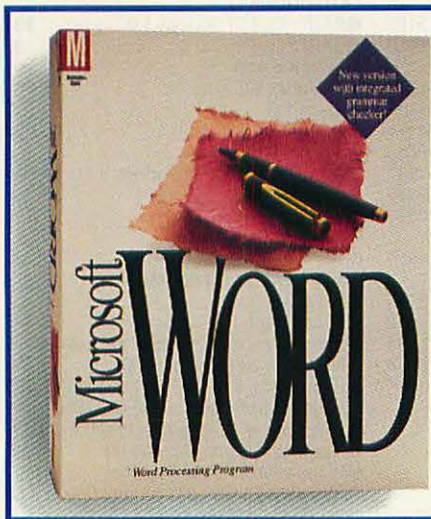
5737 7 *After Dark 2.0V*—Stops screen burn-in 28.

2196 7 *After Dark & M.A.D. Bundle* 42.

★Toyogo ... 30 day MBG		
7836	7 Nemesis Go Junior 5.0	19.
1993	7 Nemesis Scribbler 5.0	29.
7624	7 Nemesis Go Master 5.0	35.
2471	7 Nemesis Deluxe Toolkit 5.0	69.
★XOR ... 30 day MBG		
6040	MacGolf Classic	52.
3815	NFL Challenge 1.03	55.

COMMUNICATIONS MODEMS, MAIL, NETWORKS

★Abaton ... 30 day MBG		
6266	InterFax 24/96 Modem	289.
2724	InterFax 24/96 with InterShare	339.
★Applied Engineering ... 30 day MBG		
8362	7 QuadraLink (with AE Shadow)	205.
★Argosy Software ... 30 day MBG		
7872	7 Software Bridge/Mac 2.0.1	99.
2447	7 RunPC/Remote	139.
2448	7 RunPC/Network	279.
★CE Software ... 60 day MBG		
8066	7 QuickMail 2.5 (5)	249. 8067 (10)
★CompuServe ... 60 day MBG		
1676	7 Macintosh Membership Kit 1.5	25.



1673	7 CompuServe Navigator 3.04	49.
1674	7 Membership Kit/Navigator Bundle	72.
★DataViz ... 60 day MBG		
1823	7 MacLink Plus/PC 6.0	129.
4842	7 MacLink Plus/Translators 6.0	109.
★Dayna ... 60 day MBG		
	DaynaPORT E: (10BASE-T)	ea. 209.
	DaynaPORT E: SE, SE/30, II, IIsi, LC	229.
8719	EtherPrint or 9888 (10BASE-T)	ea. 349.
Dove Computer		
6758	7 DoveFax 2.0	269. 3352 NuBus
9634	7 DoveFax Plus	349. 4111 NuBus
4110	7 DoveFax LAN	499. 4109 NuBus
★Farallon Computing ... 30 day MBG		
	Full line available. Partial listing.	
9805	7 Timbuktu 4.0.2	135.
4866	7 Timbuktu/Remote 3.0	135.
9961	PhoneNET Card PC	209.
6273	PhoneNET StarConnector 10-Pack	129.
4869	PhoneNET Connector 10-Pk (DIN8)	198.
2206	PhoneNET StarController 300	899.
4802	PhoneNET StarController 357	1025.
4814	PhoneNET StarController 377	1299.
★Freesoft ... 60 day MBG		
6115	7 White Knight 11	85.
★Global Village ... 30 day MBG		
8946	7 TelePort A300	139.
8945	7 TelePort/FAX	185.



★DeltaPoint ... 60 day MBG

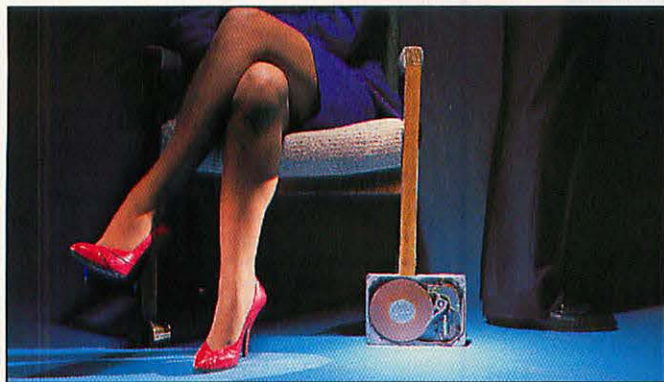
3558 7 *DeltaGraph Professional*—Over 35 different chart types for business, presentation, scientific, statistics, and engineering in both 2D and 3D. Chart types include: line, pie, bar, column, scatter and others \$209.

★Microsoft ... 30 day MBG

4902 7 *Word 5.0*—Includes an integrated grammar checker, Drag-and-Drop text, and a new Print Merge Helper. With the new Drag-and-Drop feature, users can move words, sentences, and even paragraphs by simply clicking highlighted text and dragging it to its new location. The Print Merge Helper is a graphical on-screen bar which guides users through a form letter step by step, making even the most complex or personalized form letter easy to create. Also takes advantage of System 7.0, including Balloon Help, TrueType fonts, Publish and Subscribe and support for Apple Events. Introducing plug-in modules, a new modular architecture \$299.

Hayes		
2300	7 Smartcom II for the Mac 3.3	84.
8614	Personal Modem 2400 Plus	149.
3522	OPTIMA 96 (w/free Smartcom EZ)	479.
7391	ULTRA 96 Modem	669.
Insignia Solutions		
7557	7 Access PC 1.1	60.
9726	7 Entry Level SoftPC 2.5	125.
4089	7 Universal SoftPC 2.5	193.
3229	7 SoftAT 2.5	299.
3441	7 SoftNode 1.0	105. 3454 (10 Pak)
Intel Corporation		
5119	2400EX Modem	169. 6420 (MNP)
★Microcom ... 30 day MBG		
7459	7 CarbonCopy Mac 2.0 (single)	59.
1556	7 CarbonCopy Mac 2.0 (unlimited)	179.
8027	MacModem V.32	689.
★Nuvotech ... 60 day MBG		
3000	TurboNet ST (DIN8)	29. 6751 (12 Pak)
★Orange Micro ... 30 day MBG		
2394	7 Orange386 (16 MHz)	1549.
2392	7 Orange386 (20 MHz)	1799.
★Practical Peripherals ... 30 day MBG		
8994	2400 V.42 bis Modem	199.
7934	PM9600SA Modem 1.26	469.
9849	7 SmartPack 9600 (with Smartcom II)	529.
★Prometheus ... 30 day MBG		
2590	7 ProModem 2400 Mini Plus	129.
3832	7 ProModem Remote Plus	249.
3232	7 ProModem 24/96 S/R Minifax Plus	269.
8990	7 ProModem Ultima	689.
3831	7 ProModem 9600M-EC	499.
PSI Integration, Inc.		
3143	COMstation 1	285. 3142 COM 2
★Shiva ... 30 day MBG		
3444	7 NetSerial 1.35	275.
4347	NetBridge or 4942 7 TeleBridge	409.
Sitka/TOPS		
4188	Teleconnector (DIN8)	23. 2230 (10)
6264	7 TOPS Network 3.1	187.
★Software Ventures ... 30 day MBG		
3455	7 MicroPhone II 4.0 (Dec. '91)	215.
★Synergy ... 30 day MBG		
6618	7 VersaTerm 4.6	90. 6619 PRO 3.6
★Tactic Software ... 30 day MBG		
2996	7 Traffic Controller Personal 1.0	65.
★Technology Works ... 30 day MBG		
1582	7 GraceLAN	295. 1584 Corporate
1583	7 GraceLAN 50 Node Upgrade	119.
★White Pine Software ... 30 day MBG		
3539	7 Mac 220	89.
3535	7 Mac 240	139. 3541 7 Mac 241
3544	7 Exodus	199.

Four highly reliable uses for your not-by-CORE® Macintosh® drive.



For reliability with your Mac, call *us*.

Tired of finding alternative uses for your "Click & Pray" drives? CORE hard drives are built for one purpose only. Our strict standards of quality bring you the performance you demand — and reliability you can count on.

So, after years of leading the PC users of the world to high reliability, high performance, and high capacity, we're now inviting the Macintosh user to enjoy these same standards.

Accompanying these standards are two or five year full replacement warranties, backing drives with MTBF ratings of 150,000 hours and seek times better than 14ms.

If the notion of 80, 120 & 200 MB CORE Optima Series™ drives in a small foot print external cabinet sounds appealing, or if HC Mac Series in 330, 650, 1000 & 1300MB capacities fits the bill, call us today.



CORE
INTERNATIONAL

CORE Macintosh 407/997-6055

Ingram Micro D 800/456-8000 • Merisel 800/637-4735(US) 416/-738-3920 (Canada)

CORE International, CORE, Optima, & HC Mac Series are trademarks of CORE International, Inc. Other trademarks referenced are the property of their owners. Copyright 1991 CORE International, Inc.

Circle 215 on reader service card

service unique!

- ★ **Zoom Telephonics ... 30 day MBG**
 ⑦ MX2400R Modem (w/⑦ QuickLink II) ... \$69.
 ⑦ MX2400S Modem (with SendFax 9600) ... 79.
 ⑦ FX9624 Send/receive Fax/Modem ... 119.
 ⑦ FX9624V Send/receive Fax/Modem ... 169.
 ⑦ V.42bis Modem (with MacPack) ... 139.
 ⑦ V.32 Turbo Modem (with MacPack) ... 419.

INPUT/OUTPUT

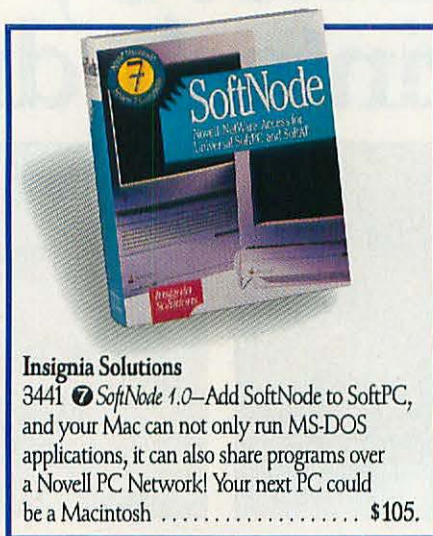
MONITORS, KEYBOARDS, MICE, PRINTERS & SCANNERS

- ★ **Abaton ... 30 day MBG**
 ⑦ Scan 300/GS (reqs. Scan Kit) ... 829.
 Scan 300/Color (reqs. install. kit) ... 989.
 Int. Kit for 300/Color with Photoshop ... 479.
 LaserScript LX ... 1729.
- ★ **Advanced Gravis ... 30 day MBG**
 ⑦ Gravis Mouse Stick ... 59.
 ⑦ Gravis Super Mouse ... 79.
- ★ **American Power**
 UPS 110SE ... 209. 6686 UPS 370ci ... 339.
 SurgeArrest Plus ... 39.
- ★ **Bravo Communications**
 2 Position Switch Box (for laser printers) ... 95.
- ★ **Caere**
 ⑦ Typist Plus Graphics ... 479.
 ⑦ OmniPage 3.0 ... 479.
 OmniPage Professional (Dec. '91) ... 669.



- ★ **FreeSoft ... 60 day MBG**
 ⑦ **White Knight 11-11** award winning communications program that supports XMODEM, MODEM, ZMODEM, Kermit, and Compu-e Error Correcting protocols. Includes yto 1.0 and a free subscription to GENie ... \$85.

- ★ **CoStar**
 ⑦ LabelWriter II ... 193.
 AddressWriter (Jan. '92) ... 499.
 ⑦ Stingray ADB (platinum or black) ... ea. 89.
- ★ **Curtis Manufacturing ... 30 day MBG**
 MVP Mouse (MVP-1) ... 89.
- ★ **Datadesk ... 30 day MBG**
 ⑦ MAC101E. 129. 2384 with QuickKeys. 149.
 Switchboard (modular keyboard) ... 159.
- ★ **Everex ... 30 day MBG**
 ⑦ Silhouette Trackball 1.0 (ADB Macs) ... 78.
- ★ **GDT Softworks**
 ⑦ BetterWriters 1.0 (software drivers) ... 39.
 ⑦ PrintLink Collection/Serial 4.0.1 ... 59.
 ⑦ PrintLink Collection/Parallel 4.0.1 ... 139.
 ⑦ JetLink Express/Serial 2.1 ... 89.
- ★ **Hewlett-Packard**
 HP B&W DeskWriter (w/cartridge) ... 479.
 HP Color DeskWriter C (w/color cart.) ... 849.
 HP LaserJet IIIP (with toner, reqs. kit) ... 1149.
 HP LaserJet III (with toner, reqs. kit) ... 1679.
 HP ScanJet IIc (color) ... 1599.
- ★ **Kensington ... 30 day MBG**
 ⑦ Turbo Mouse 3.0 (Plus or ADB) ... ea. 107.



Insignia Solutions

3441 ⑦ **SoftNode 1.0**—Add SoftNode to SoftPC, and your Mac can not only run MS-DOS applications, it can also share programs over a Novell PC Network! Your next PC could be a Macintosh ... \$105.

- ★ **Koala**
 2593 ⑦ MacVision Gray-Scale Digitizer 3.5 ... 259.
 2879 ⑦ MacVision Color Digitizer 1.1 ... 499.
- ★ **Logitech ... 30 day MBG**
 1671 ⑦ MouseMan ... 77.
 5082 ⑦ ScanMan Model 32 G-Scale Scan ... 299.
- ★ **Mass Microsystems**
 Rival Monochrome Systems ... ea. 1199.
- ★ **MicroSpeed ... 30 day MBG**
 2807 ⑦ MicroTRAC (for SE & II family) ... 75.
 6621 ⑦ MacTRAC ADB 2.0 (SE & II family) ... 75.
- ★ **Microtek ... 30 day MBG**
 1981 ⑦ MS-II OCR Scanner ... 849.
 1978 ⑦ Scanmaker 600GS ... 1199.
 1985 ⑦ Scanmaker 600ZS ... 1599.
 1982 ⑦ Scanmaker 1850S ... 2299.
- ★ **Monster Design Group**
 1486 MacSpeakers (two, stereo) ... 169.
- ★ **Mouse Systems ... 30 day MBG**
 3005 ⑦ A³ Trackball (ADB) ... 79.
 ⑦ Little Mouse or ⑦ Little Mouse Plus ... ea. 74.
 3355 ⑦ PageBrush/Color ... 559.
- ★ **Nutmeg Systems ... 30 day MBG**
 ⑦ 19" for SE, SE/30, II, IIsi ... ea. 995.
 ⑦ 19" for GrayScale SE/30, II, IIsi ... ea. 1295.
 ⑦ 20" Color System: SE/30, II, IIsi ... ea. 2595.
- ★ **Orange Micro ... 30 day MBG**
 3036 ⑦ Grappler 2.0 ... 92. 6229 ⑦ LX ... 111.



★ Mouse Systems ... 30 day MBG

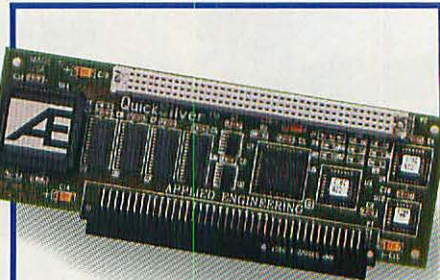
3005 ⑦ **A³ Trackball (ADB)**—Add 3-button functionality to your Mac. Redefines input devices with a 350 cpi, space saving & responsive trackball. A/UX, MacX, MacOs, Xwindows and System 7 compatible. ... \$79.

- ★ **Sophisticated Circuits ... 30 day MBG**
 8009 ⑦ PowerKey 1.01 ... \$64.
 8008 ⑦ PowerKey Remote ... 32.
- ★ **SuperMac Tech. ... 30 day MBG**
 4139 Monochrome Card (NuBus only) ... 349.
 4134 19" Gray-Scale/Mono Display ... 999.
 1805 19" SuperMatch Color Display ... 1999.
- ★ **Thunderware**
 4994 ⑦ LightningScan 400 ... 385.
 3107 ⑦ LightningScan Pro 256 ... 519.

UPGRADES & DRIVES

MEMORY, ACCELERATORS

- ★ **SIMMs ... with free video & manual**
 8316 1 MB SIMMs (80ns, set of 2) ... 85.
 9437 2 MB SIMMs for IIsi or II LC ... 89.
- ★ **Applied Engineering ... 30 day MBG**
 1971 FastMath LC ... 139.
 8361 ⑦ 1.44 MB High Density Drive ... 229.
 2532 QuickSilver Accelerator for the IIsi ... 309.
 3319 TransWarp SE with FPU (25 MHz) ... 829.
 3317 TransWarp SE with FPU (40 MHz) ... 1499.
 4146 TransWarp LC ... 829. 4147 with FPU ... 999.



Applied Engineering

2532 **QuickSilver Accelerator** for the IIsi—Gives your Mac IIsi speed and expandability with an SE/30 slot extender, a cache card and a 68882 math coprocessor chip on board. Comes with a 5 year warranty. ... \$309.

Computer Care

BookView Imperial (memory and video card for Apple's PowerBooks) ... call
 BookRAM 2S, 4S, 6S, DRAM 4 ... call

- ★ **Dayna ... 60 day MBG**
 8722 DaynaFile II 1.2 5 1/4" Drive ... 429.
- ★ **DayStar Digital ... 30 day MBG**
 Does not include optional math chip.
 LT200 Connection (PC) ... 175. (MC) ... 279.
 DualPort IIsi with 20 MHz 68882 ... 165.
 8556 ⑦ FastCache for Mac IIsi ... 265.
 3401 ⑦ FastCache IIsi. 299. 3389 with FPU. 369.
 PowerCache for SE/30, II, IIsi, IIsi, LC 40 MHz ... 899. 50 MHz ... 1399.
- ★ **FWB, Inc. ... 30 day MBG**
 2320 HammerDisk44 (removable) ... 739.
 2331 PocketHammer 50 ... 569.
 2329 PH 100 ... 769. 2314 PH 200 ... 1199.
 2341 Hammer Internal 50is ... 389.
 2333 100is ... 599. 2334 200is ... 999.
- ★ **IOMEGA**
 2224 90 MB Transportable (reqs. kit) ... 799.
 2467 Gold Std. Rem. Disk (90 MB, tri-pak) ... 439.
 7789 ⑦ Mac 1B Interface (w/Retrospect) ... 39.
 2466 ⑦ Mac 2B Interface (w/Retrospect) ... 99.
- ★ **Mass Microsystems**
 2605 DataPak 45 ... 649. 2599 DataPak 88 ... 899.
 4103 DataPak MO ... 2899.
 Diamond 120-510 MB Hard Drives ... call

(Avail. most areas.)



★Prometheus ... 30 day MBG

8990 ⑦ ProModem Ultima—14,400 bps (V.32bis) modem w/9600 bps S/R fax capability & all the software, including the new Maxfax 3.0! Supports V.42bis/MNP 5 data compression/error correction for up to 4 times the throughput! **\$689.**

★Micron ... 30 day MBG

7149 ⑦ Xceed IIci-128K Cache Card 239.
2262 Xceed Color 30 Card (SE/30) 279.
2260 Xceed Gray-Scale 30 Adapter Card 75.

Peripheral Land, Inc. (PLI)

8335 PLI TurboFloppy 1.4 309.
8327 PLI Infinity 40 Turbo (removable) 699.
9752 PLI Infinity 88 Turbo 849.
2644 Quantum 52 MB External 479.
8330 PLI 105 MB 619. 8329 200 MB 989.
2327 PLI 2GB DAT Drive 1939.
2325 PLI Infinity Optical Drive 3199.
1866 Quick SCSI Card (requires cable) 319.

PSI Integration, Inc.

3135 PSI MultiColor 99.
3137 Crunch-It! LC 113.
3141 Cache-It! 189.

Sigma Designs

1501 DoubleUp with ⑦ DiskDoublers 3.7 179.

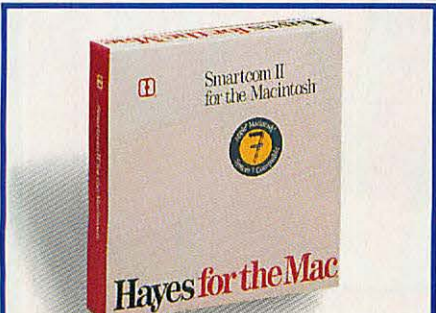
★Total Systems ... 30 day MBG

7817 16 MHz Mercury 030 (for Mac SE) 359.
7816 20 MHz Gemini 030 799.
68882 Math Coprocessors call

STORAGE MEDIA

★3M ... 60 day MBG

3943 DC2000 40 MB Data Cartridge 18.



Hayes

2300 ⑦ Smartcom II for the Mac 3.3—Powerful communications software made easy. Features "Autopilots" for automatic dialing & log-on, programmable buttons, as well as support for MultiFinder & a variety of transfer protocols **\$84.**

★Fuji ... 60 day MBG

2214 3 1/2" DS Disks (10) ... \$9. 2242 (50) ... \$39.
2215 3 1/2" HD Disks (10) ... 15. 2241 (50) ... 69.
4863 3 1/2" HD Disks (20) w/storage case 29.
2243 3 1/2" Color (10) DS ... 10. 2239 HD ... 18.
Fuji 1/4" Data Cartridges call

★Sony ... 60 day MBG

3297 3 1/2" DS Disks (10) ... 9. 6148 (30) ... 25.
3298 3 1/2" HD Disks (10) ... 16. 6375 (30) ... 45.
1603 DG60M 16. 2520 DG90M 27.
Sony 1/4" Data Cartridges call

★SyQuest ... 60 day MBG

6592 44 MB Cartridge ... 69. 9728 (10) ... 649.
3603 88 MB Cartridge ... 110. 3600 (10) ... 999.

ACCESSORIES

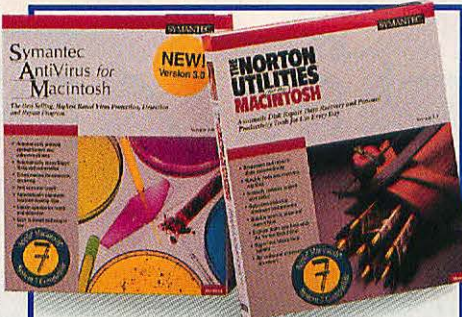
TONERS, CASES, DUST COVERS

Apple Computer

9773 StyleWriter Ink Cartridge 22.
7748 Personal LaserWriter Toner Cartridge 89.
1115 LaserWriter II Toner Cartridge 105.

★Avery ... 60 day MBG

7050 Avery 5660 (1" x 2 5/8" Clear Adrs.-Laser) ... 32.
4811 Avery 5182 (8 1/2" x 11" Trans.-Laser) 22.
5392 Avery 5196 (3 1/2" Disk Labels-Laser) 29.
4807 Avery 5160 (1" x 2 5/8" Address-Laser) 24.



★Symantec ... 30 day MBG

3598 ⑦ Norton Utilities for Mac & SAM Bundle—Two essential utility packages at a new low price through 1/31/92! SAM provides complete virus protection; Norton Utilities gives you tools to keep your Mac running smoothly ... **\$118.**

★Basic Needs ... 60 day MBG

Full line of Dust Covers, Stands, etc. call

CoStar

6091 The Organizer ... 189. 7453 Org. Jr. ... 82.

★Curtis Manufacturing ... 30 day MBG

8973 Apple Security Kit (SL-2) 22.

★Goldstein & Blair ... 30 day MBG

8374 ⑦ The Macintosh Bible (with disks) 25.

IDG Books

2238 Macworld Guide to System 7 Book. 19.

★I/O Design ... 30 day MBG

8812 Ultimate Classic Carrying Case 64.
3371 Ultimate PowerBook Carrying Case 75.
1941 Ultimate LC Carrying Case 95.

★Kensington ... 30 day MBG

Full line available. Partial listing.

4973 Power Tree 20 27.
2559 Apple Security Kit 33.
9303 Keyboard Shelf 39.
6763 Mac SE Anti-Glare Filter 52.
5064 Apple Color Monitor Polarizing Filter 63.

★MacConnection ... 60 day MBG

1505 Oak Disk Case (36) ... 21. 4623 (90) ... 32.

★Moustrak ... 60 day MBG

2694 Moustrak Pad (7"x9") ... 8. 2692 (9"x11") ... 9.
2693 Moustrak Pad Low Friction (9"x11") ... 10.



★Fuji ... 60 day MBG

4863 Fuji 3 1/2" HD Disks w/storage case—Introducing a new 20-Pack of Fuji 3 1/2" High Density Disks packed in a convenient, free disk storage case. **\$29.**
Also available, Fuji 1/4" Data Cartridges ... call

★Targus ... 60 day MBG

3617 Mac Classic/Plus/SE Case 5.
1305 Universal Notebook (for PowerBooks) ... 6.
4015 Mac SE & Ext. Kybd. Carry Case 7.

OUR POLICY

- We accept VISA and MASTERCARD.
- No surcharge added for credit card orders.
- Your card is not charged until we ship.
- If we must ship a partial order, we never charge freight on the shipment(s) that complete the order (in the U.S.).
- No sales tax, except Ohio residents (please add applicable tax).
- All U.S. shipments insured; no additional charge.
- APO/FPO orders shipped First Class Mail.
- International orders U.S. \$250 minimum. Manufacturer support and upgrade eligibility may be limited outside the U.S.A.
- Upon receipt and approval, personal and company checks clear the same day for immediate shipment of your order.
- Corporate P.O.s accepted subject to credit approval.
- COD max. \$1000. Cash or certified check.
- 120 day limited warranty on all products. Defective software replaced immediately. Defective hardware repaired or replaced at our discretion. All items subject to availability. Prices and promotions subject to change without notice.
- Our order lines are open continuously from 8:00 a.m. Monday until noon Sunday Eastern Time. You can call our business offices at 603/446-7711 Monday through Friday 9:00 a.m. to 5:30 p.m. Eastern Time.

SHIPPING

Continental US: Barring events beyond our control, all credit card orders phoned in weekdays by 3:15 a.m. Eastern Time will ship Airborne Express for delivery the next business day. Which means same day delivery for orders placed between midnight and 3:15 a.m. Eastern Time. (Some orders may ship by UPS Ground for next day delivery). Saturday delivery available to many areas upon request. Some areas require an additional day delivery. The total freight charge on any order placed with MacConnection is only \$3.

Hawaii, Alaska, Canada, Puerto Rico and U.S. Virgin Islands: Call 800/800-3333 for information on shipping and charges.

All other areas: Call 603/446-7711 or FAX 603/446-7791 for information.

MacConnection[®]

TRUTH, JUSTICE, SOFTWARE, AND PERIPHERALS SINCE 1984.

ANOTHER INSPIRING BREAKTHROUGH FOR WEEKEND WARRIORS EVERYWHERE.

ORDER
THIS WEEKEND

AND GET IT
MONDAY. \$3

OR ORDER FRIDAY, GET IT SATURDAY. (AVAILABLE IN MOST AREAS.)

1-800/800-3333

Have We Got a Dealer for You

BY STEVEN LEVY

FOURTEEN YEARS AGO WE WERE the little guys on the block," reads a prominent ad in the *New York Times* by a dealer called Computer Era. "Today we're #1 in Macintosh sales in the Nation. Well, we got there by MAKING FRIENDS AND MAKING IT RIGHT!"

But not all of Computer Era's customers count the Manhattan superstore among their friends. Some of them told their stories last year in the *Mac Street Journal*, the monthly newsletter of the New York Mac Users' Group (NYMUG). Words like *slime*, *sleaziness*, and *crooked* were flung. Five members claimed they were misinformed or lied to by Computer Era salespeople. They reported broken promises regarding delivery dates, misquoted suggested retail prices, and mischaracterizations of Apple equipment. My favorite allegation involved a woman who wanted a new mouse and a sales rep who reportedly claimed that "Macintosh mice are serialized and coded for the specific Mac CPU they're used on. We can't just sell you a mouse. You'll have to bring the entire unit in." The cost? A mere \$400, according to the *Mac Street Journal* report.

Not surprisingly, considering these complaints, some letter writers referred to the store as Computer Error. But what was the store's reply? None, according to the newsletter's editor, Wili Scher-Grodner, who wrote, "We have written and telephoned Computer Era for comment; no store employees have ever returned our numerous calls or would connect us to anyone on the executive staff."

Even the best large retail operation would be expected to have at least an occasional dissatisfied customer. But three pages of these letters gave the impression that Computer Era routinely abused its buyers. Was it true? And if Computer Era was indeed the nation's largest Mac dealer, and the charges of untrustworthiness were borne out, what did this say about Apple Computer, which authorized the store to represent it? Enquiring columnists want to know.

To Era Is Human

I HAD ALREADY MADE ONE TREK TO Computer Era as a customer. People buy

at Computer Era for its well-advertised low prices. When my wife needed a laser printer last year, I accompanied her to the corner storefront on Park Avenue South. The prices were indeed attractive, but I was taken aback by the store's operation. As soon as I crossed the threshold, it was clear that Computer Era was unlike any Apple retail dealership I had ever visited.

Before we could enter the sales area, we were confronted with a reception desk. A receptionist requested that we wait for a salesperson. After a few minutes a cordial, well-dressed woman emerged and whisked us to the sales floor, which was carpeted and austere except for towering stacks of Macintosh boxes.

I explained what we wanted and the price quoted over the phone minutes before. She filled out a sales agreement, disappeared again, and then reemerged, confirming that we could have it. But we would have to pay in cash or certified check. Since we're not in the habit of toting over a thousand dollars hard currency, and the banks were closed, we settled on an odd compromise: we would write a check, but Computer Era would also charge our American Express card for the entire amount. When our check cleared, the company would return us the unremitted credit slip, torn in half.

To my relief, we got the torn Am Ex receipt the next week. The printer worked fine—still does—and a few days later we even got a call from Computer Era asking if everything was OK. So I qualify as a satisfied customer.

Only later did I hear the stories of dissatisfied customers. These harrowing tales seem to have a similar plot line—a failed covenant leading to a mildly Kafka-esque quest for redress. Most of the horror stories I've heard are festooned with colorful descriptions of the desperate, doomed measures people take to get answers from salespeople, managers, and executives.

One such soul is Mark Robinson, a musician and NYMUG member. Condensing his Stygian tale does not convey its true depths. Basically, he claims that in Sep-

tember 1989 he bought an SE with what Computer Era described as an Apple-made hard drive. He also bought a one-year extended service contract. The drive was defective, and he discovered that it was not of Apple manufacture (Apple buys from third parties) but from a now-defunct manufacturer with a history of faulty products.

Robinson says that despite his repeated visits, Computer Era's service center did not fix the drive. Once, he says, they even tried to tell him he violated the service agreement by using a Kensington trackball. Finally, he says, several days before the agreement expired, he insisted that a service representative repair the unit. He says that the store held the computer until the contract expired and returned it to him, with the same equipment problems. After attempting to resolve the situation through the Better Business Bureau, Robinson is now planning to file a civil lawsuit. The store's alleged shenanigans led the local CBS affiliate to produce an investigative segment on the evening news under the rubric "Shame on You." The segment reportedly exposed Computer Era's practice in late 1990 of advertising Mac Classics for a low price. When people came in to take advantage of the ad, they were told to add their names to a long waiting list—or buy a more expensive computer.

Ultimately, the matter came to the attention of the New York City Board of Consumer Affairs. It received 26 complaints about Computer Era, a number considered significant and that "indicates a pattern" of abuse, according to spokesperson Pat Cohen. The situations that triggered complaints ranged from alleged bait-and-switch tactics to misleading advertising. Cohen reports that the majority of these complaints were eventually settled with the help of the agency. The investigation of Computer Era resulted in what is called an assurance of discontinuance, an agreement that the store would adhere to consumer law by advertising merchandise



*Computer Era
says it's
Number One,
some customers
disagree*

continues

only when it was in stock or easily obtainable, specifying delivery dates for purchases, refunding money if delivery dates were not met, and maintaining a rain check policy. In signing the agreement and paying \$2000 to reimburse the department for its investigative costs, Computer Era officially conceded no wrongdoing; however, as Cohen explains, companies that do refuse to sign such agreements face possible court action by the department.

Computer Era Responds

WHEN I SOUGHT THE OTHER SIDE OF the story, I got a drastically different picture. As soon as my call was returned by Computer Era vice president Robert Haas, it was clear that I had entered *Rashomon* country. Instead of being defensive about his business, he oozed pride.

He invited me for an inside look at his Macintosh empire. I found not a slick operator but a menschy 37-year-old. Haas and his assistant gave me the "ten-

cent tour." Considering the store's approximately 37,000 square feet and more than 120 employees, that was a bargain.

I was shown both the retail operations and a thriving corporate business that sends salespeople out to the field. I saw rooms where training seminars are allegedly held. The tour also included a quick visit to the oak-paneled office of Erwin Haas, the paterfamilias who engineered the store's transformation from an electronics store in the seventies to a dealer of MS-DOS machines in the eighties, and finally, in 1987, to an all-Mac operation. "When everybody zigged, we zagged," explains Robert Haas. For approximately two years, he says, Computer Era has laid claim to being Apple's single largest dealer. (An Apple Computer spokesperson would not confirm this, telling me no such rating exists.)

The tour included a visit to the sales floor, where Haas explained the store's unconventional approach to retail computer sales. "We organize by tables so people can sit down and be comfortable—talk person to person," says Haas. He thinks the alternative—people wandering around the store and toying with equipment—can lead to a "Tower of Babel." As for the insistence on cash sales in certain cases, he explains that for highly discounted advertised products, a credit card fee would cut into the bone-thin profit margin.

After my tour, I was convinced that Computer Era *does* care about reaching out to customers after a sale. In fact, at Computer Era, postsale contact is part of an integrated strategy that has led some to admiringly call the store a sales-generating machine. The store maintains extensive lists of customers and leads and uses hordes of telemarketing salespeople to pepper them with solicitations on a regular basis. If you buy there, rest assured someone will call you later to ask if you want more. Even people who bring their computers in for service are mined as potential leads. The lists, along with detailed follow-up sheets, are maintained by a sophisticated custom software program—Computer Era has four full-time Mac programmers on the project.

In addition, Computer Era has a "customer satisfaction coordinator" who works full-time at preventing the kind of bitter unhappiness experienced by the people who charge Computer Era with unethical practices. Mark Robinson might not believe me on this, but I saw this person with my own eyes, coordinating satisfaction even as I watched.

So why the consumer complaints? Why did WCBS say "Shame on You"?

continues

Put an end to software piracy!

Meet the growing family of security keys from Software Security.

Each one a specialist at enforcing your license agreement in virtually any user environment you can think of. Whether it's DOS, UNIX, Macintosh or OS/2...whether it's a single user installation or a LAN.

Simply connect the appropriate key to a single user computer, or a non-dedicated file server in a network, and you control all access to your protected application.

Users, however, won't even know it's there. The keys are transparent and won't impact software functionality or the ability to make back up copies. Normal node and LAN operations are unaffected.

Simple. Unassuming. Ever vigilant. Easy to incorporate into your application package. And quite possibly the most profitable hardware investment a software developer can make.

Call: **1-800-333-0407**

IN CONNECTICUT CALL: 203-329-8870
FAX 203-329-7428
EUROPE AND UK: +44 784 43 00 60



SEE US AT MW EXPO
BOOTH # 433
MOSCONE CENTER

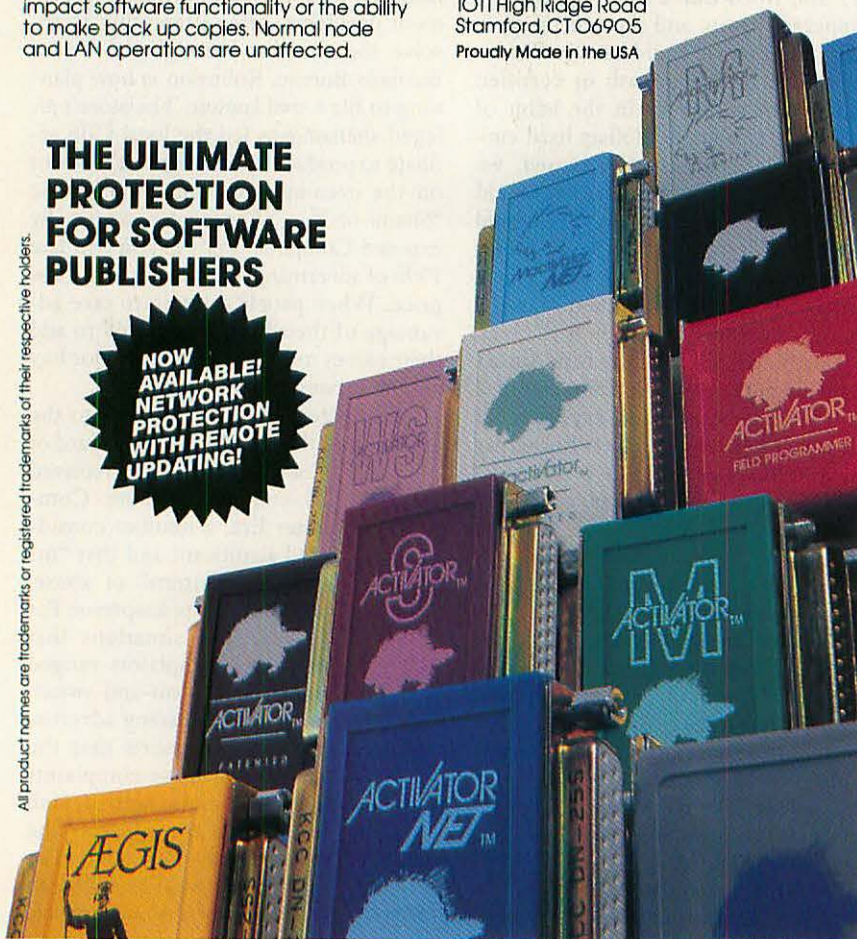
SOFTWARE SECURITY INC.

1011 High Ridge Road
Stamford, CT 06905

Proudly Made in the USA

THE ULTIMATE PROTECTION FOR SOFTWARE PUBLISHERS

NOW AVAILABLE!
NETWORK
PROTECTION
WITH REMOTE
UPDATING!



Circle 107 on reader service card.

STATISTICA/Mac™

STATISTICA/Mac™ A complete statistical data analysis system with hundreds of presentation-quality graphs integrated with all procedures. In-depth, comprehensive implementations of: *Exploratory techniques; Descriptive statistics; Frequency tables; Large selection of nonparametric tests; Stepwise multiple regression methods with nonlinear models and extended diagnostics; Logit/Probit transformations; General implementation of ANOVA/ANCOVA/MANOVA/MANCOVA (designs of statistically unlimited complexity, repeated, nested, incomplete, random, blocking covariates, contrast analyses, post-hoc tests, custom designs); Discriminant function analysis statistics; Canonical analysis statistics; Time series modeling techniques with forecasting; Factor analysis with rotations; Cluster analysis (incl. hierarchical, k-means, and 2-way clustering); Distribution fitting (a large selection of continuous and discrete distributions); Curve and surface fitting and smoothing (incl. linear, DWLS, NEXP, and others); and much more.* ■ Manual with comprehensive introductions to each method and step-by-step examples. ■ Quick Start booklet explains all program conventions. ■ Extensive data management facilities: a super-fast spreadsheet of unlimited capacity; merge/split files; "double identity" of values (numeric/text); BASIC-like data transformations; Import/Export from/to Excel, MacSS, CSS and other formats. ■ Graphs integrated with all procedures (e.g., click on a correlation coefficient to produce the corresponding scatterplot; click on a variable in the descriptive statistics table to produce a histogram; click on an interaction plot in the ANOVA table to see means, click on the graph option to produce a plot of interaction). ■ Large selection of 2-dimensional graphs: Histograms (incl. multiple, clustered breakdowns, overlaid functions), Scatterplots (incl. multiple, weighted frequency, smoothed, function fitting), Multiple and Range plots, Trend plots, Standard deviation plots, Data sequence diagrams, Box-and-whisker plots, Column plots, Bar graphs, Double pie charts, Scrollable dendrograms, Two-way joining plots, Curve fitting plots, Distribution comparison plots, Range plots, Probability plots, Discrimination plots, Factor space plots, Casewise outlier and residual diagrams, ANOVA interaction plots, Multivariate scatterplot matrices (Exploratory Draftsman plots) with histograms, and many other specialized plots. ■ Large selection of 3-dimensional graphs: 3D surface (with data smoothing procedures and color or grey-scale shading), Scatterplots, 3D block scatterplots, 3D axis (space) plots, 3D spectral plots with adjustable planes, 3D line/ribbon plots, 3D sequence block plots, 3D histograms, 3D surface-smoothed frequency plots, and 3D range plots ("flying boxes"). ■ All 3D plots displayed in true perspective, feature interactive real-time rotation facilities (incl. continuous rotation). ■ Extensive graph customization options: all structural aspects of graphs (axes, legends, patterns, colors, sizes, styles, regions, perspective, rotation, fitted functions, etc.) and MacDraw-style tools with specialized "objects". ■ All output displayed in Scrollsheets™ (dynamic, internally scrollable tables: all members can be instantly converted into a variety of on-screen customizable, presentation-quality graphs). ■ All Scrollsheets can be saved as data files and used for input. ■ Flexible facilities to perform analyses on specific subsets of data. ■ Extremely large analysis designs. ■ Unlimited size of files. ■ Unlimited precision. ■ Unmatched speed (e.g., on a Mac fx, arbitrary rotation of a surface with 1,000 points takes 1 second; correlation matrix 50x50 with 100 cases—less than 3 seconds; transposing a 5,000 data points file—less than 2 seconds). ■ Price: \$495.

Quick STATISTICA/Mac™ A subset of STATISTICA/Mac with all basic statistical modules of STATISTICA/Mac (Basic and Descriptive statistics, Frequency tables, Exploratory data analysis, Nonparametrics, Distribution Fitting, Stepwise multiple regression; ANOVA/ANCOVA). ■ Quick STATISTICA/Mac manual with comprehensive introductions to each method and step-by-step examples (Quick Start booklet explains all program conventions). ■ All data management facilities of STATISTICA/Mac. ■ All graphics facilities of STATISTICA/Mac (including interactive rotation of all 3D plots, extensive on-screen graph customization facilities). ■ Price: \$295.

DOS versions also available (can exchange data with Macintosh versions): STATISTICA/DOS™ \$795; Quick STATISTICA/DOS™ \$295.

Statistic sh/h \$7 per product; please specify type of computer with order; 14-day money-back guarantee.

 **StatSoft™**

25 E. 13th St. • Tulsa, OK 74104 • (918) 583-4149
Fax: (918) 583-4376

Regional Offices: StatSoft of Europe (Hamburg, FRG), ph: 040/4200347, fax: 040/4911310; StatSoft UK (London, UK), ph: 0462/482822, fax: 0462/482855; StatSoft Pacific (Melbourne, Australia), ph: 613-866-1766, fax: 613-866-3318; StatSoft Canada-CCO (Ontario), ph: 416-849-0737, fax: 416-849-0916. Available from: CORPORATE SOFTWARE and other Authorized Representatives Worldwide: Holland: Lemax BV 02065-98701; France: VERSION US (1) 40590913; Sweden: Akademidata 018-240035; Finland: STATCON, fax: 24333867.

StatSoft, STATISTICA, STATISTICA/Mac, STATISTICA/DOS, and Scrollsheet are trademarks of StatSoft, Inc.; Macintosh, Mac fx, Excel, and MacDraw are trademarks of their respective companies.

Circle 99 on reader service card

Why did the Bureau of Consumer Affairs investigate?

Robert Haas says that no matter how hard one tries, a small minority will always be dissatisfied. On the other hand, he does concede that some ill feelings could have come from the store's extensive advertising of \$699 Mac Classics in 1990, when unbeknownst to Computer Era, none were to be had for months. He also bemoans the failure of Computer Era's voice-mail system to efficiently connect

customers to salespeople and managers. (The store has upgraded the system, and is in the process of installing a more powerful phone system.) He insists, however, that the business's intentions were always to do right by its customers. Computer Era, he contends, takes a lot of heat simply because it is the biggest.

The Apple Line

ONE VOICE WAS MISSING IN THIS *Rashomon*-esque tale: that of Apple. So I

spoke to Godfrey Sullivan, a ten-year Apple veteran who recently ascended to the position of vice president of U.S. reseller operations. He detailed what Apple expected of its dealers: they should display its products, answer customer questions, and provide face-to-face sales, service, and support. I asked if Apple had adequately looked after the interest of consumers patronizing these dealers. "I'm not sure," he said, "that we've done a good job of that in the past." When asked what he thought of a dealership where admittance to the sales floor was restricted by a receptionist, and where free access to product demonstrations was not encouraged, he said, "I might find that a little unusual," adding that though Apple did not require its dealers to accept credit cards on all sales, he'd consider a cash-only policy odd.

I asked whether it was Apple's policy to monitor dealerships for unsavory tactics. Sullivan was emphatic that Apple did not tolerate certain practices, like bait-and-switch, yet he was vague on Apple's enforcement measures. He said that matters might be helped by a toll-free phone line for customer feedback Apple set up last year. Sullivan confirmed that Apple hopes to expand its retail channels to include so-called superstores. These will presumably deliver Macintosh products at low prices.

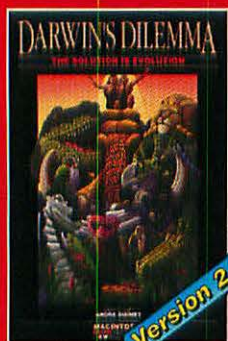
But I wonder if the concept has its perils. Stores designed to sell in high volumes have a tremendous built-in pressure to maintain those volumes. Inevitably, whether through negligence or simply routine mix-ups, some people will have problems. The question is what happens when they seek redress. Will Apple maintain dealer guidelines that keep these poor suckers out of consumer hell? Or will they be dismissed as a small minority who slipped through the cracks?

Robert Haas thinks it would be unfair to consider his store in a discussion of malefactors in the Macintosh world. Computer Era doesn't mistreat its customers, he says—its success comes in part because of considerable attention to customer satisfaction. As proof, his assistant shoves two file folders at me, bulging with unsolicited letters from satisfied customers. I browse through them and indeed they contain accolades from satisfied buyers. Yet one missive seems out of place. It is a complaint letter from an unhappy customer—another horror story.

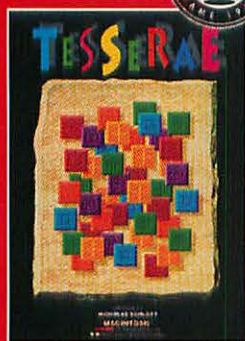
How it got in the folder, I don't know. Some things just slip through the cracks, I guess. **m**

GET INLINE FOR A GOOD TIME!

Inline Design makes the most of your Macintosh! Inline games feature great graphics, tremendous sound, and complete ease of use. And you can count on full compatibility and great customer support.



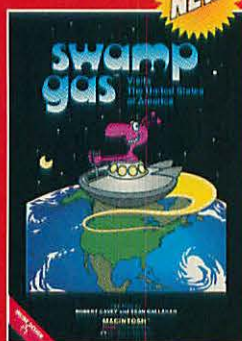
Darwin's Dilemma, the captivating conundrum everyone's talking about.
\$\$\$\$ -MacUser 4/91



Stunningly beautiful Tesseract, a refreshing, exasperating full-color puzzle.
"Best Brain Game"
-MacWorld 1/92



3 in 3, by Fool's Errand author Cliff Johnson, an animated full-color adventure that shows you a side of your Macintosh that you never imagined.
\$\$\$\$ -MacUser 10/91



Swamp Gas, a charmingly wacky educational geography game for all ages, with arcade-style rewards for good performance.



Take your Mac to Mutant Beach! The fully-animated, full-color interactive action adventure that everyone's been waiting for!



All games fully compatible with all Macs from the Plus to the Quadra, including the Classic, LC, and IIsi. No copy protection.

INLINE DESIGN 5 West Mountain Road, Sharon, Connecticut 06069

For more information, or the location of a dealer near you, call 1-800-453-7671

Circle 111 on reader service card.

Macworld columnist STEVEN LEVY is writing a book on artificial life.

NOTEBOOK SYSTEM

THE OUTBOUND



**SMALLER.
LIGHTER.
FASTER.
UPGRADEABLE!**

"OUTBOUND OFFERS TOP-NOTCH PORTABLE MAC." *MacWEEK Magazine*

"Outbound's new Notebook System has the unique ability to grow along with your requirements — and your budget." *MacUser Magazine*

"Outbound's notebooks are solid machines and deserve serious consideration by anyone contemplating buying a Mac notebook." *Macworld Magazine*

"Innovative touches, a high degree of compatibility, and moderate pricing make the Outbound Notebooks strong competitors with Apple's portable Macs." *Portable Office Magazine*

The new Outbound™ Notebook System offers true notebook size and portability, plus the Macintosh® environment you know and love. Small enough to fit in most briefcases, all models measure 8.5 x 11 x 2.1 inches and weigh only 6.25 pounds.

Mac-Compatible. The Outbound Notebook you choose is ready for action immediately because the Macintosh ROM is already installed. This means the thousands of Macintosh software applications available are completely compatible.

Upgradeable. You'll appreciate the benefits of the easily upgradeable microprocessor boards, hard disk drives and system memory. This value-added bonus lets you expand the Outbound's capabilities as your computing needs grow. There's no need to worry about early obsolescence.

Power and Performance.

If speed is important, look no further.

Running at up to 33 MHz, the Outbounds are the

fastest Mac-compatible portables around. And now Outbound offers up to 14 MB of RAM. Designed for your comfort, each Outbound Notebook boasts a full-size, silent keyboard. In tight quarters, use the keyboard mounted TrackBar™ to point and click. Or, add a mouse or other ADB pointing device. The backlit, LCD screen is large and easy to read, and provides 17% more displayable area than the Apple® PowerBook™ screens. Plus, all Outbound Notebooks have a versatile, built-in floppy disk drive so you can work with high and low density Macintosh and MS-DOS® diskettes.

Service and Support. Your Outbound Notebook is backed by a one-year warranty. Should you need technical assistance, simply dial our Customer Service line — it's just a toll-free call away.

Easy Decision. Want a smaller, lighter, faster, Mac-compatible portable computer? One that's so upgradeable it will last many years? The Outbound Notebooks give you all this and more. Just check the comparison chart below and see for yourself who offers more features and flexibility, then call us today.

NEW LOW PRICES

Cost-effective upgrades are quick and simple thanks to the Outbound's unique modular design.

1.800.444.4607



COMPARE FOR YOURSELF

	Outbound 2000	PowerBook 100	Outbound 2030E	PowerBook 140	Outbound 2030S	PowerBook 170
Processor/Speed	68000/20 MHz	68000/16 MHz	68030/25 MHz	68030/16 MHz	68030/33 MHz	68030/25 MHz
RAM	2 to 4 MB	2 to 8 MB	4 to 14 MB	2 to 8 MB	4 to 14 MB	4 to 8 MB
Upgradeable CPU & Hard Disk	Yes	No	Yes	No	Yes	No
Random Access Memory (RAM)	0 to 12 MB	0 to 6 MB	0 to 60 MB	0 to 6 MB	0 to 60 MB	0 to 6 MB
Hard Disk Drive	40, 80 or 120 MB	20 MB	40, 80 or 120 MB	20 or 40 MB	40, 80 or 120 MB	40 MB
Math Coprocessor	None	None	Optional 68881	None	Optional 68881	68882
Internal Floppy Drive	1.4 MB SuperDrive*	None	1.4 MB SuperDrive*	1.4 MB SuperDrive™	1.4 MB SuperDrive*	1.4 MB SuperDrive
Virtual Memory Capability	None	None	None	Standard	Standard	Standard
Display	10" Dia., 640 x 480	9" Dia., 640 x 400	10" Dia., 640 x 480	10" Dia., 640 x 400	10" Dia., 640 x 480	10" Dia., 640 x 400

The 1.4 MB Floppy Disk Drive is SuperDrive-equivalent. Technical specifications subject to change without notice. All other brand and product names mentioned are trademarks or registered trademarks of their respective holders.

registered trademarks of Apple Computer, Inc. PowerBook and Apple SuperDrive are trademarks of Apple Computer, Inc. All other brand and product names mentioned are trademarks or registered trademarks of their respective holders.



Outbound Systems, Inc., 4840 Pearl East Cr., Boulder, Colorado
Phone: 303.786.9200 Fax: 303.786.8611

See us at Macworld booth 51.

Circle 30 on reader service card

Satisfied Customers Real Key to Determining Effective Macintosh Training Options

by Randall D. Smith
President MacAcademy

Is reading a computer manual really the best way to learn a computer program? Isn't it easier to use videos, audio training or live training workshops?

Our phones haven't stopped ringing since David Pogue's article appeared in December's issue of *MacWorld Magazine*. "Is this guy for real?" "Does he really think the best way to learn programs is by reading the manuals?" "Did he really view your training videos?" "Has Mr. Pogue ever taught anybody anything?"

To update the fortunate ones who missed the article, Mr. Pogue, under the heading of *The Desktop Critic*, wrote an article in December's issue basically condemning most third party training programs available for the Macintosh computer. His final comment was, "Frankly, there are better ways to learn software—like reading the manuals."

MacAcademy Videos

MacAcademy videos were one of those "reviewed" by Mr. Pogue. Two things were very obvious from the outset of the article. One, that the author takes his title of *critic* very seriously, and two, that he hasn't spent much time in the real world of Macintosh training.

Weakness or Strength?

Mr. Pogue's critique of the MacAcademy videos were as follows: 1) They were filmed with instructors speaking in real voices instead of reading from a prepared script; 2) Real instructors were used instead of paid professional actors; 3) MacAcademy tapes did not use enhancements such as musical backgrounds and breakaways using outdoor scenery; 4) Occasionally an instructor would slip and use the wrong word on the video such as calling a



Over 2,000 people signed up for the seven MacAcademy training sessions at *MacWorld Asia* in Hong Kong. Randall Smith, President of MacAcademy teaches *Aldus PageMaker* user techniques, tips, and short-cuts.

document a program; 5) That nothing was actually *created* in the program but rather a *tour* of program features was all that was shown. The article did point out that the videos were extremely reasonably priced at only \$49 each and carried a full 30 day money-back guarantee.

5 Years Training Experience

Unlike Mr. Pogue's limited view, MacAcademy's experience has shown that next to live workshops, video training is the most effective method of training available. People don't like computer manuals. They don't understand them and they won't take the time to read and study them. Computer manuals are written by computer techies. The average Mac user doesn't understand computer language and usually gets lost in the manuals.

A recent article in *MacWeek Magazine* (9/10/91 Pg.63) contradicts Mr. Pogue when it comes to training. The article states, "Videotape training has become the most popular alternative

to classroom instruction. Video and audio training makes sense for employees who can't be away from their desks for more than a day." And also stated, "But when you carefully consider your company's particular needs, you may find that self-paced tutorials can supplement or replace the classroom in a cost-effective manner."

MacAcademy Video Series

MacAcademy videos capture the spirit of a live classroom with the instructor on videotape. Our customers don't want people reading scripts blandly into the camera. They don't want to listen to an actor who doesn't know the program. And they certainly don't want to pay \$479 for a 2-hr. video just to have music and nice outdoor footage. Our customers want straight forward, no-nonsense, effective training at a price they can afford.

MacAcademy videos, unlike whatever Mr. Pogue thought he was watching, do create actual documents and take you step-by-step through each

Effective Low-Cost Training

feature of the program. Each step is explained in detail along with excellent short-cuts and user techniques.

The Proof

MacAcademy presents over 100 live training workshops in every major city in America. MacAcademy trainers are hand picked from hundreds of applicants and are some of the best and most effective Macintosh teachers available anywhere. Over the past few months these MacAcademy teachers have stood in front of over 25,000 Macintosh owners and have been evaluated by each student. Each instructor is graded on a scale of "1" to "5" by each graduate. Currently all MacAcademy instructors must average at least 4.6 to continue training for the Academy.

MacAcademy videos are successful for two reasons: they are effective and they are affordable. Each video comes with a complete 30 day guarantee. As of today, after tens of thousands of videos being sold, less than 1% have been returned. In other words, 99% of all MacAcademy video buyers are satisfied with the valuable training offered in MacAcademy training tapes.

So who is right? Mr. Pogue in his infinite wisdom and extensive training background (it says David's favorite activity is helping fellow New Yorkers take their first step into the Macintosh world. I guess this means throwing those Mac users a manual and telling them to go for it.) or tens of thousands of satisfied MacAcademy customers?

The True Test of Quality

If our methods didn't work we wouldn't have grown to be the largest Macintosh training organization in the world today. We understand Macintosh training, we know what works, and we know how to get people into a program as quickly as possible. Manuals just aren't as effective!

Test The Power Of Video Yourself

I invite you to take advantage of the MacAcademy Video Training Library listed here. Orders are shipped within 48 hours and fully guaranteed. Thank you for your business.

Here are a few comments from users of the videos:

"Just one of the short-cuts you showed me in Word saved me 20 minutes of set-up time, not to mention frustration, on a new document this morning. Thanks!"

C. Robbins Turlock, CA

"We at AMPSKO Metalworks wish to express our appreciation for your video series. They are demonstrational and extremely helpful learning tools which have enabled us to grasp more easily the concepts of the Macintosh computers."

M. Torres Wash., DC

"Having viewed your wonderful tapes for the third time I feel that we are old friends. As a result my Mac SE-30 is running 'lean and mean'. Thanks again."

J.J. Johnson San Jose, CA

"Please accept my compliments on your training series. You explained everything so clearly and I'm amazed at how much I learned..."

P. Dunkel N. Kingston, RI

"We doubted that video tapes would be acceptable to us. We were pleasantly surprised and very favorably impressed with the quality of your tapes. Accordingly, I have enclosed an order for your latest releases."

H. Anderson Computer Consultant

MacAcademy Video Training Library \$49 each

To order call **800-527-1914**
with credit card information

or

Mail order to
MacAcademy Dept.
MW292

477 S. Nova Rd.
Ormond Beach, FL 32174

or

FAX to 904-677-6717

Corporate Purchase Orders,
Checks, & Credit Cards
Accepted. Add \$3 plus \$1 per video
Shipping & Handling

Lotus 1-2-3 Part 1	<input type="checkbox"/>
Lotus 1-2-3 Part 2	<input type="checkbox"/>
Lotus 1-2-3 Part 3	<input type="checkbox"/>
Adobe Photoshop Part 1	<input type="checkbox"/>
Adobe Photoshop Part 2	<input type="checkbox"/>
Adobe Photoshop Part 3	<input type="checkbox"/>
Claris Resolve Part 1	<input type="checkbox"/>
Claris Resolve Part 2	<input type="checkbox"/>
Claris Resolve Part 3	<input type="checkbox"/>
ClarisWorks Integration	<input type="checkbox"/>
ClarisWorks W. Processing	<input type="checkbox"/>
ClarisWorks Database	<input type="checkbox"/>
ClarisWorks Spreadsheet	<input type="checkbox"/>
ClarisWorks Graphics	<input type="checkbox"/>
Quicken	<input type="checkbox"/>
MacProject Part 1	<input type="checkbox"/>
MacProject Part 2	<input type="checkbox"/>
WordPerfect Part 1	<input type="checkbox"/>
WordPerfect Part 2	<input type="checkbox"/>
The Macintosh Part 1 (7.0)	<input type="checkbox"/>
The Macintosh Part 2 (7.0)	<input type="checkbox"/>
The Macintosh Part 3 (7.0)	<input type="checkbox"/>
The Macintosh Part 1 (6.0+)	<input type="checkbox"/>
The Macintosh Part 2 (6.0+)	<input type="checkbox"/>
The Macintosh Part 3 (6.0+)	<input type="checkbox"/>
Macintosh Networks	<input type="checkbox"/>
Utilities, CDEV's, Inits	<input type="checkbox"/>
Using System 7	<input type="checkbox"/>
HyperCard Basics Part 1	<input type="checkbox"/>
HyperCard HyperTalk Part 2	<input type="checkbox"/>
HyperCard HyperTalk Part 3	<input type="checkbox"/>
Adobe Illustrator 3.0 Part 1	<input type="checkbox"/>
Adobe Illustrator 3.0 Part 2	<input type="checkbox"/>
Adobe Illustrator 3.0 Part 3	<input type="checkbox"/>
Freehand 3.0 Part 1	<input type="checkbox"/>
Freehand 3.0 Part 2	<input type="checkbox"/>
Freehand 3.0 Part 3	<input type="checkbox"/>
MacDraw Pro Part 1	<input type="checkbox"/>
MacDraw Pro Part 2	<input type="checkbox"/>
Canvas 3.0 Part 1	<input type="checkbox"/>
Canvas 3.0 Part 2	<input type="checkbox"/>
Canvas 3.0 Part 3	<input type="checkbox"/>
SuperPaint Part 1	<input type="checkbox"/>
SuperPaint Part 2	<input type="checkbox"/>
Paints & Draws	<input type="checkbox"/>
PowerPoint	<input type="checkbox"/>
Persuasion Part 1	<input type="checkbox"/>
Persuasion Part 2	<input type="checkbox"/>
Design & Layout Techniques	<input type="checkbox"/>
PageMaker Part 1	<input type="checkbox"/>
PageMaker Part 2	<input type="checkbox"/>
PageMaker Part 3	<input type="checkbox"/>
QuarkXPress 3.1 Part 1	<input type="checkbox"/>
QuarkXPress 3.1 Part 2	<input type="checkbox"/>
QuarkXPress 3.1 Part 3	<input type="checkbox"/>
Excel 3.0 Part 1	<input type="checkbox"/>
Excel 3.0 Part 2	<input type="checkbox"/>
Excel 3.0 Part 3	<input type="checkbox"/>
Excel 3.0 Part 4	<input type="checkbox"/>
WingZ Part 1	<input type="checkbox"/>
WingZ Part 2	<input type="checkbox"/>
WingZ Part 3	<input type="checkbox"/>
Works Integration 1	<input type="checkbox"/>
Works Word Processing 2	<input type="checkbox"/>
Works Database 3	<input type="checkbox"/>
Works Spreadsheet 4	<input type="checkbox"/>
FileMaker Pro Part 1	<input type="checkbox"/>
FileMaker Pro Part 2	<input type="checkbox"/>
FileMaker Pro Part 3	<input type="checkbox"/>
Microsoft Word Part 1	<input type="checkbox"/>
Microsoft Word Part 2	<input type="checkbox"/>

Circle 106 on reader service card



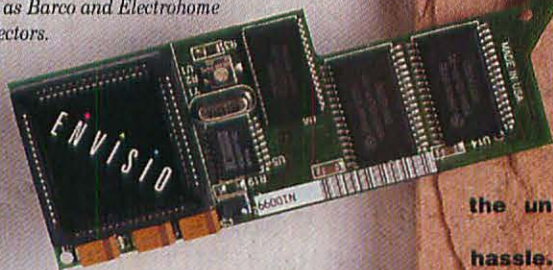
DOES THE POWERBOOK HAVE ITS LIMITS? NOT ANYMORE.



The Envivio Display Adaptor 030 enables you to use color applications and view 256 colors on displays like the Apple 13" RGB and VGA monitors.



Envivio NoteBook Display Adaptors work with most Apple and VGA compatible LCD projection panels, as well as Barco and Electrohome projectors.



You've got to love the PowerBook. Its innovations can take your work to the cutting edge. But with Envivio's NoteBook Display Adaptors, you can go further still. Now you've got the power to drive a range of external monitors and projectors. Suddenly, you've got a powerful desktop computer. A persuasive presentation tool. Connect to a full or two-page display, and you can view one or two 8.5" x 11" pages at once. And by connecting to an LCD overhead or RGB projector, you can share your work with an audience. Use NoteBook Display Adaptor 030 and you can view or project 256 brilliant colors on Apple's RGB Display or VGA monitor. And fast? It's the obvious choice

for animation and QuickTime. The PowerBook means freedom, so of course Envivio NoteBook Display Adaptors reside inside the unit. No external hardware, no hassle.

An Envivio Authorized Dealer can help you take your PowerBook to the limit. We suggest you visit one today.

E N V I S I O

510 1ST AVENUE NORTH • SUITE 303 • MINNEAPOLIS, MINNESOTA 55403
PHONE (612) 339-1008 • FAX (612) 339-1369

©1991 ENVIVIO INC. NoteBook Display Adaptors is a trademark of ENVIVIO INC. Apple, Macintosh, Barco and Electrohome are trademarks of their respective companies.

End users circle 129 on reader service card

Dealers circle 150 on reader service card

The Storage Spiral

BY DEBORAH BRANSCUM

NATHAN SCHULHOF WANTS you to know it is not his fault Jasmine folded. The former vice president for sales and marketing at Jasmine Technologies was hired a few months before the storage company emerged from Chapter 11 bankruptcy in July 1990. His job was to help bring Jasmine back to health. But it didn't quite happen that way. Like many Macintosh storage companies last year, Jasmine found itself in a shrinking market, with lower profit margins and more competition than ever. The defeated company closed its doors last fall in the face of a creditor's lawsuit that Schulhof said the company couldn't afford to fight.

The same forces that Schulhof says killed Jasmine generally make hard drives a bargain for consumers. Overproduction of 3.5-inch hard drives by manufacturers has brought the price down on the most popular models, according to Phil Devin, director of computer storage research for Dataquest of San Jose, California. That translated, at press time, into prices under \$300 in advertisements for the least-expensive 50MB drives. (It wasn't always thus. The January 1986 issue of *Macworld* lauded Apple's "new" Hard Disk 20 for its "competitive price of \$1499" and its "relatively high storage capacity of 20.77 megabytes)."

Good News, Bad News

THE SAME PROCESS THAT LOWERS prices for consumers sometimes wreaks havoc in the storage industry. As Ron Wolf put it in a *San Jose Mercury News* article last summer, "Even in the best of times, disk-drive companies must struggle to keep up with exceptionally rapid improvement in recording technology and its relentless effect upon prices. Each year or two, manufacturers find a way to squeeze twice as much data onto a magnetic disk. The process, which has the effect of driving down prices for data-storage products, has continued for three decades and shows no signs of slowing."

The resulting low prices aren't unmitigated good news for consumers. Sure, resellers buy drive mechanisms at lower cost. But they are also pressured to

sell their drives at lower cost, in the face of fierce competition that keeps profit margins ever smaller. Too small, say some executives, to adequately support and service their customers. As a result, some companies close their doors, leaving users with worthless warranties. Others diversify their offerings or move out of hard drives altogether.

Everex Systems is one such company. By the end of January, its EMac subsidiary will no longer sell hard drives for the Macintosh, although it will continue to service and support existing customers.

"The main reason is just plain and simple economics," says David Le, Everex group manager for peripherals. "There are too many vendors of sub-systems." The problem, says Le, is that consumers can't tell the difference between EMac's drive and those of its competitors. "When users look at the package, they look at price," says Le. "We get caught in that kind of game and we've never been able to win it."

Storage prices have dropped across the computer industry as a whole, but Macintosh drive companies have faced particularly tough times recently. "The aftermarket for Apple products has diminished very, very dramatically," says Dataquest analyst Devin. An Apple Computer spokesperson said a simple majority of Macs have shipped with internal hard drives for some time; currently, the "vast majority" include hard drives. Devin estimates that more than 80 percent of Macintoshes are shipped with hard drives from the factory. Despite increasing Mac sales, that leaves considerably less business for storage companies.

Dead Again

I SPOKE TO SCHULHOF SEVERAL times last fall as his company collapsed. He doesn't feel responsible for the company's failure.

"Looking back, I think Chess S.A. [Jasmine's European owner] and myself did an excellent job," Schulhof says. "When Jasmine came

out of bankruptcy, on July 18, we took \$100,000 in monthly sales and brought them to \$1 million in monthly sales. And we repaired more than 2500 prebankruptcy drives. . . . In looking back, there's really not too much we could have done differently."

The reason, claims Schulhof, is that Jasmine had an installed base of more than 150,000 to support in a declining market and a faltering economy. Jasmine's profit margin dropped from 30 percent to 20 percent. Hard drive companies that sell 40MB drives at \$299 are making a 20 percent margin, says Schulhof. That's \$60 per drive. A company needs salespeople, tech-support staff, and other employees to track product sales, diagnose returned drives, and ship new and repaired products. "Here we've just made \$60," says Schulhof. "You get one service call, you've wiped out your profit. Without profit, you can't continue." The key to survival, says Schulhof, is high margins and a diversified product line.

Jasmine's death is the end of an era, Schulhof says, in part because consumers have changed. "Three years ago, most users had no idea what kind of mechanism they had in their drives and they didn't care. Now they know." According to Schulhof, most Mac owners look for the best price on a mechanism built by a particular company, not for a brand name on the drive itself. "Unless Mirror makes some changes, it's headed down the same road as Jasmine," he says. "And so are all the other drive makers."



*Prices go down,
capacity
goes up, and
some
companies are
caught
in the middle*

Mirror Responds

MIRROR TECHNOLOGIES BEGS to differ. Company president Ron Eibensteiner takes exception to the notion that his company is on the way out, or that Jasmine was an innocent victim of hard times. "The reason Jasmine went out of business was not because Apple started bundling hard drives," says Eibensteiner. "Jasmine went out of business because operationally Jasmine was mismanaged. I looked at

continues

buying some inventory and product groupings from Jasmine [last summer]. I walked through the facility, and it was very apparent to me... that the company wasn't going to be around for much longer... The thing that will keep storage companies in business [is] operations. When I walked through Jasmine, I saw operations that were very sloppy." (Schulhof denies this was the case.)

Like Jasmine, Mirror has faced tough times; it nearly went out of business in 1987. The peripherals company was drowning in red ink—it owed \$1.1 million to lenders and \$1.2 million to vendors. Ron Eibensteiner stepped in as CEO and president in 1988. The public company is still posting losses, but last fall Mirror's sales were up 72 percent compared to nine months before and Eibensteiner predicts Mirror will show a profit next year. Still, why should consumers believe that Mirror will thrive?

"At skinny margins, we can do a better job than anyone else. That's not to imply we will be the lowest price. We won't be," he says.

The Ehman Example

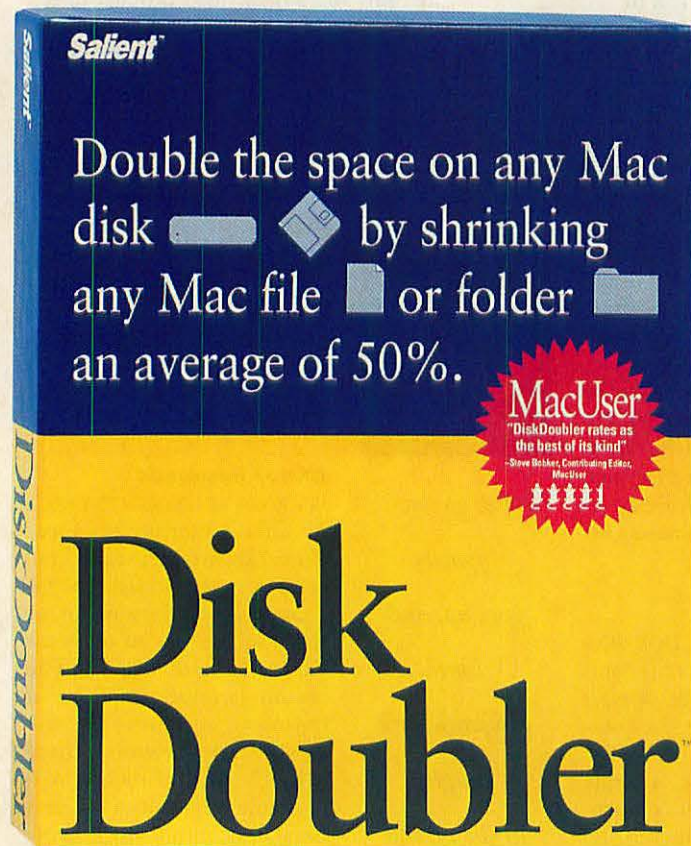
EHMAN, FOR ONE, DISCOVERED THAT rock-bottom prices could help build a

business but not necessarily sustain it. Like Mirror, the company was founded in 1985 to sell memory upgrades; it then branched into storage and other peripherals. At first the company simply stressed price and value. But in mid-1989, Ehman's advertising began directly comparing its prices against those of competitors. It was an effective strategy. According to several sources, Ehman's sales grew some 1000 percent between December 1989 and December 1990.

In the summer of 1990, competitors pointed to Ehman as a candidate for problems because of its low prices and low margins. At the time, company president Michael Ehman denied his company couldn't live on low margins. Today, he seems to have a somewhat different perspective, fashioning himself as the rugged Macintosh individualist who tried to face down a bunch of ornery outsiders. "We came in and offered good value," says Ehman. "Then a bunch of IBM guys like Hard Drives International came in and undercut us. And we tried to match them for a while, defend the Mac world against them, but then we decided [a year and a half ago] to take care of ourselves. That's when we stopped selling on price."

The company did run into a crisis last year, but not directly as the result of low margins. Ehman was tripped up by management problems that were exacerbated by intense growth and too little capital to fund that growth, according to company officials and consultants. Like some others in the industry, Ehman set up a credit line with a financial service company. According to industry sources, such services offer manufacturers a cash-flow buffer by promptly paying suppliers for components. After the manufacturer assembles and sells its inventory, it pays the financial service for the loan, plus an interest charge. About a year ago Ehman lost the credit line used for paying suppliers, in part because of sloppy accounting practices. The resulting cash-flow squeeze was compounded by a kind of management do-si-do, in which Michael Ehman ran the company, then hired a replacement, then fired the replacement and returned to the helm. In the meantime, drive repairs mounted and so did back orders for products, company officials say. At one point, sales dropped by half, according to Ehman consultant Kin Seto. Sources say the company lost money in 1990 and 1991.

continues



Because no disk is big enough.

Introducing AutoDoubler at Macworld Expo San Francisco



Salient
SOFTWARE, INC.
415-321-5375

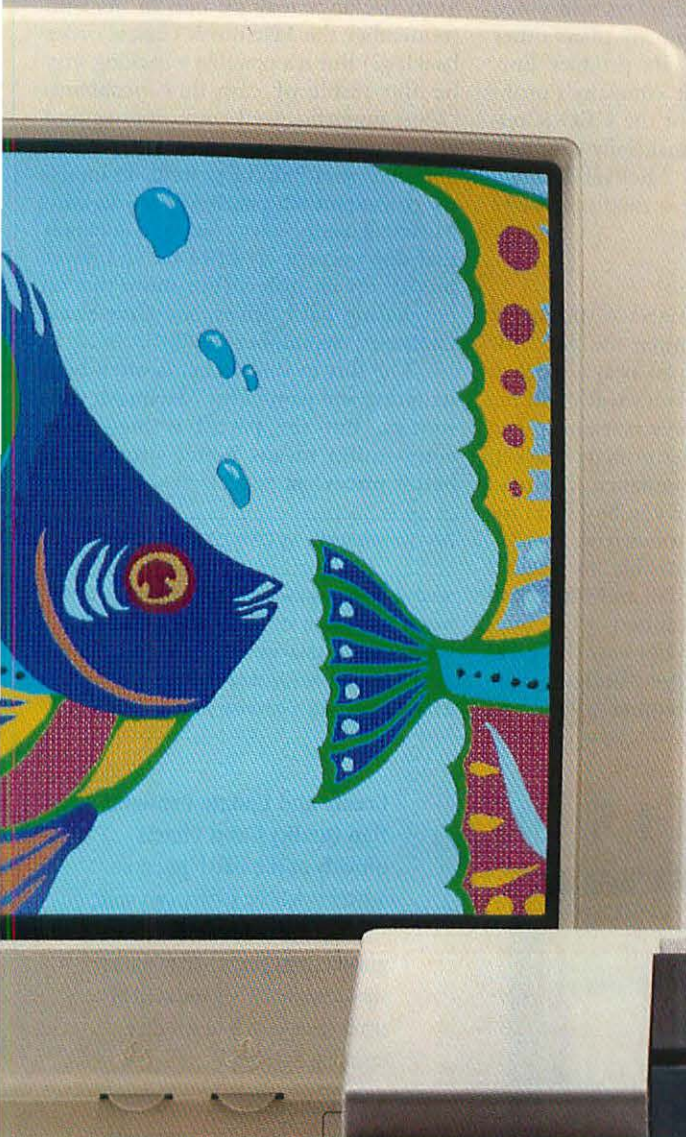
Available at leading software stores for \$79.95 SRP

124 University Ave., Palo Alto, CA 94301. DiskDoubler is a trademark of Salient Software, Inc. © 1991.

Circle 39 on reader service card.

See gorgeous color.

Print gorgeous color.



If you've ever wished you could afford to print in vivid color, the new Canon Color Bubble Jet™ printers are for you.

The first thing you'll notice is the brilliant, rich color. That's because both the BJC-800 and the BJC-820 print up to 360 dpi using four snap-in ink cartridges: black, cyan, magenta, and yellow. So you get true black and richer darker shades.

You'll also admire these printers' versatility. They print on virtually any size plain paper up to 11" by 17", on transparencies and envelopes.

Now you can be as creative as you want, preparing stunning presentations, graphics, even posters, right in your office. You'll be able to see results and make changes immediately, which saves time and gives you more control.

All these advantages are yours whether you use an IBM® PC or a Macintosh®, because the BJC-800 has a parallel interface and the BJC-820 has a SCSI interface.

You'll even be impressed with the cost. Both printers are a lot less than you'd expect, and the cost per page is remarkably low when compared with most other color printers.

Simply call 1 (800) 848-4123, and see how easily you can afford to improve your image.



Canon

COLOR BUBBLE JET PRINTERS
BJC-800/BJC-820

See us at Macworld Expo
Booth# 2407 Moscone Center

Canon® and BJ® are registered trademarks and Bubble-Jet is a trademark of Canon Inc. Macintosh® is a registered trademark of Apple Computer, Inc. IBM® is a registered trademark of International Business Machines Corp. The Color Bubble Jet printers will be available the first quarter of 1992. © 1991 Canon U.S.A., Inc.

Circle 164 on reader service card

Service Hero

James Turner of Roanoke, Virginia, writes in praise of Qume. Until recently, Turner was quite happy with his Qume Crystal-Print laser printer. "But with the advent of System 7, I was disappointed to receive errors when I tried to print TrueType fonts. I called Qume's technical support to try and purchase an upgrade. I was amazed when Qume told me they were aware of the incompatibility and then shipped me an upgrade via UPS second-day air at no charge. My printer was six months out of warranty and they happily sent me an upgrade that rectifies the only qualm I had with my printer."

By the time I visited Ehman in Evanston, Wyoming, last fall, the company's problems of the spring and summer seemed resolved. Virtually all defective drives had been repaired and returned, according to officials, and the product-order backlog was nearly filled.

Michael Ehman is a classic entrepreneur. Though he is reportedly brilliant, no one claims he's a good manager, least

of all the man himself. But that may change. A team of consultants is helping him face the growth and management issues that threatened the company's existence a year ago. More than half of Ehman's sales are now displays and video products, and the company plans other offerings to diversify its product line. That doesn't mean the company's problems are all solved. But the CEO is optimistic. "We're not financially troubled, we're set now," says Michael Ehman. "Our debt has been restructured, we're increasing profitability."

Buyer Beware

WHETHER SLOPPY MANAGEMENT OR slow sales killed Jasmine, the need for storage is not going to go away. As prices drop, marginal companies will continue to be squeezed by lower margins, a bad economy, and a smaller primary market, thanks to Apple's dominance. It's possible that the company you buy from today may not be here tomorrow.

Because it's impossible to predict which companies will fail and which will thrive, take some precautions when buying a drive. Do your homework by researching products (see "Budget Storage," *Macworld*, September 1991, and

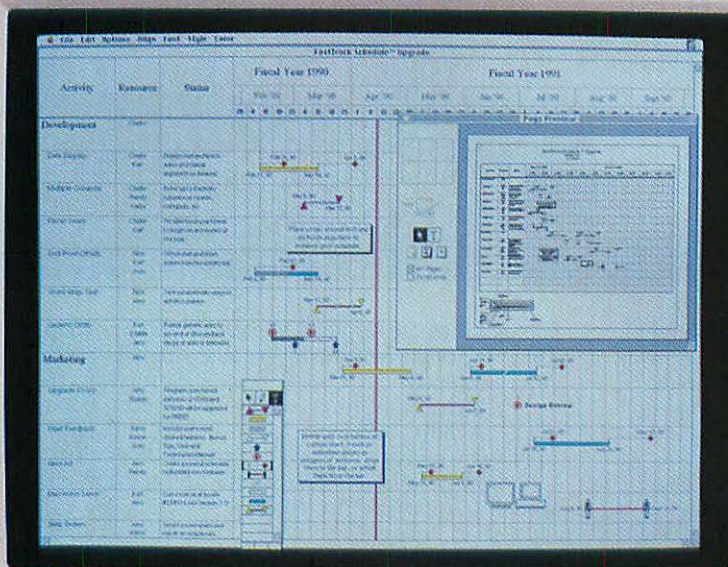
"Seeking Midrange Hard Drives," in this issue, for recommendations) and company reputations through dealers, user groups, and bulletin board services. Be wary of long delays in product deliveries. Such backlogs may be due to demand (remember the Macintosh Classic order backlog?) But it's possible a backlog may be the result of cash-flow problems. "Most underfinanced companies cannot afford sufficient inventory for prompt delivery," says Ralph Fascitelli, an industry consultant who currently works with Mirror. Finally, steer clear of companies that don't accept credit cards, and never prepay for an order. (For more tips on purchasing hard drives, see *Conspicuous Consumer*, September 1990.)

The flux in the market is often both irritating and painful for Macintosh consumers. But the payoff is big—more competition means better products at better prices. **m**

Research assistance by CAROLYN BICKFORD.

Send nominees for sainthood to *Service Heroes*, *Macworld*, 501 Second St., San Francisco, CA 94107, or via AppleLink (Macworld1) or America Online (Branscum). Conversely, drop *Conspicuous Consumer* a line if a company is ignoring you.

FastTrack Schedule 1.5



So much to schedule—so little time.



"Provides the highest degree of functionality and the best on-screen and printed graphic ability in its class." *MacUser*, October 1989.

Create and Update Presentation Quality Gantt Charts quickly and easily!

Just draw activities right on screen, customize your bar types and add labels, graphics, text blocks and multi-level sub-activities. When you need to make changes to your schedule, updating is a SNAP!

Some features:

- Schedule in hours, days, weeks, months, quarters, years, fiscal years and generic formats.
- Display start and finish dates in columns, or align to bars.
- Display multiple activity columns.
- Import and export data.
- Much, much more!

Please call for your **FREE** interactive demo kit!

(800) 346-9413 or (703) 450-1980.

AEC
SOFTWARE

Circle 83 on reader service card

FrameMaker.

The most comfortable seat in document publishing.

FrameMaker's table editor lets you create detailed tables with straddled cells, graphics, unlimited paragraphs, and rotated text.

Executive Seating The Ergonomics Of Business

The Macintosh High Back Chair Family

Ergonomics. Scientific. Scientific. There are the words that describe the science of the Macintosh High Back Chair Family. Macintosh High Back Chair Family is designed to provide a perfect harmony with the desk, the keyboard, and the user's posture, and the additional features to use.

The Macintosh High Back Chair Family is designed to provide a perfect harmony with the desk, the keyboard, and the user's posture, and the additional features to use.

One way to create a more comfortable seating posture is to use the Macintosh High Back Chair Family. The Macintosh High Back Chair Family is designed to provide a perfect harmony with the desk, the keyboard, and the user's posture, and the additional features to use.

FrameMaker automatically reformats multichapter documents, updating page and paragraph numbers as well as cross-references.

To experience a whole new comfort level in document publishing, have a seat in front of a Macintosh® running FrameMaker®.

► FrameMaker integrates the entire publishing process into one easy-to-use application: Authoring, editing, graphics, page layout, production, even hypertext. Whether you create short, simple documents or long, structured documentation, you'll feel right at home with FrameMaker.

► You'll find our new version, FrameMaker 3.0, even more inviting. You can create your own intricate, multipage tables with its sophisticated table editor. And generate and maintain multiple versions of a single document with its conditional text capabilities. You can even import full-color images and produce four-color output of DCS images.

► That's the kind of innovation that earned FrameMaker an Editor's Choice award from MacWEEK and accolades from MacUser.

► And of course, it's compatible with System 7.0.

► So call 1-800-U4-FRAME ext. 955 for more information on FrameMaker 3.0 and the name of your nearest reseller. And feel how comfortable a position in publishing can be.

 **Frame**™

"THE BEST UPGRADE VALUE WE'VE SEEN YET FOR THE SE." —MacWEEK

**ONLY THE MOBIUS 030
DISPLAY SYSTEM OFFERS
MAC IIx PERFORMANCE
STARTING AT JUST \$995.**

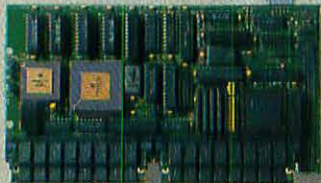


A big screen with built-in acceleration that lets you keep pace with the latest Macs—for one third the cost of buying one. It turns your Mac into a high-speed workstation with up to five times more work space. Enough room for an entire layout in PageMaker,[™] a full page in Word,[™] or a complete budget in Excel.[™] Your documents will always appear

razor-sharp and rock-solid—"very bright, very sharp, very easy on the eyes," according to

MacWorld.

But that's only half the picture. You'll also experience a quantum leap in performance, because only Mobius integrates video and 030 acceleration on the same card. "The best and second-best improvements the Mac SE can get," according to MacWeek. So your SE or Classic



Our combined 25 MHz 030 accelerator and video card will make your Mac run up to six times faster. Or faster yet with our optional math coprocessor.



will run as fast as a Mac IIcx, saving you hours of time and frustration waiting for your Mac.

While your Mac goes faster, your cash doesn't. "What separates the Mobius 030 Display System from all the competition is simple old-fashioned value," claims MacWeek.

Call us today to place an order or for more information on Mobius Display Systems.

And see for yourself what the best upgrade value is for your SE or Classic.

MOBIUS
TECHNOLOGIES, INC.

800.523.7933

© 1991 Mobius Technologies, Inc. Mobius 030 Display System is a trademark of Mobius Technologies, Inc. All other trademarks are property of their respective holders. Mobius Technologies, Inc., 1125 Atlantic Avenue, Alameda, CA 94501, 510/523-7900, Fax 510/523-8452. All Mobius displays pass the most stringent Swedish Emissions Standards.

Updates

FEBRUARY 1992

THIS SECTION LISTS
THE LATEST VERSIONS OF SELECTED
MAC APPLICATIONS
THAT WERE ANNOUNCED BY THE TIME
WE WENT TO PRESS.

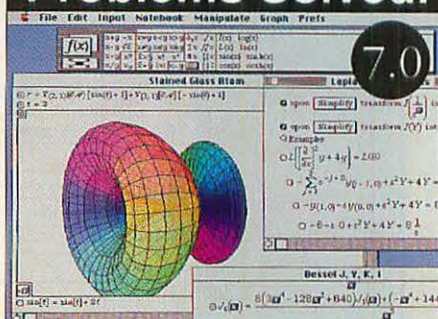
PRODUCT	V.	REQ.	*	\$
4TH DIMENSION	2.2	1MB/6.0		\$99
A4	3.0	2MB/6.0.5		\$395
AATRIX CHECKWRITER II	3.02	512K/4.1	*	
ACCOUNTANT, INC. PROFESSIONAL	3.0	1MB/6.0.3	*	
ACCUTEXT	3.0	4MB/6.0		\$150
ACTA 7	7.0	512KE/6.0.5	2/92	\$33.50
ADDOTION	2.0	2MB/6.0.5	*	
ADDRESS BOOK PLUS	2.0	1MB/6.0.2	2/92	\$25
ADOBE ILLUSTRATOR	3.2	2MB/6.0.3	*	
ADOBE PHOTOSHOP	2.0	2MB/6.0.2	9/91	\$199
ADOBE TYPE MANAGER	2.0	1MB/6.0.2		FREE
AFTER DARK	2.0	512KE/4.1	5/91	*
AGENT DA	2.0	1MB/6.0.5		\$30
AGFATYPE	3.0	2MB/6.0.2		FREE
ALARMING EVENTS	1.0.3	1MB/6.0.2	11/91	\$15
ALDUS DIGITAL DARKROOM	2.0	1MB/6.0	9/91	*
ALDUS FREEHAND	3.1	1MB/6.0.5	8/91	*
ALDUS PAGEMAKER	4.01	4MB/6.0.3	*	
ALDUS PERSUASION	2.0	1MB/6.0.5	*	
ALDUS SUPER 3D	2.5	2MB/6.0.5	*	
ALDUS SUPERPAINT	3.0	1MB/6.0.5		\$65
ALLIANCE POWER TOOLS	2	1MB/6.0.4	*	
AMAZING PAINT	1.0.1	512KE/6.0.4		\$15
ANTITOXIN	1.4	512K/3.2		\$15
APPLESHARE FILE SERVER	2.0	512K/3.2	*	
ARCHICAD	4.0	5MB/6.0	10% of list	
ASHLAR VELLUM	2.10	4MB/6.0.2	*	
ASHLAR VELLUM 3D	2.10	4MB/6.0.2	*	
ATONCE	1.2	1MB/6.0.5	*	
AUDIOMEDIA	2.02	2MB/6.0.7		\$29
AURACAD	3.01	1MB/4.0		\$90
AUTHORWARE PRO	1.7	2MB/6.0.5	*	
AUTOSAVE II	2.0	512KE/4.2	*	
A/UX	2.0	4MB/6.0.5	*	
AZIMUTH	2.0	1MB/6.0.2	2/92	\$45
BACKFAX	2.0	1MB/6.0.3		\$75
BACKMATIC	2.0	1MB/4.2	2/92	*
BILL-IT	2.6	1MB/6.0.3	*	

PRODUCT	V.	REQ.	*	\$
BITSTREAM TYPEFACE LIBRARY	2.0	1MB/6.0	*	
BUSINESS SENSE	1.4.1	1MB/6.0	*	
CA CRICKET PRESENTS	2.0.1	1MB/6.0	*	
CALENDAR	1.1.2	512KE/6.0	11/91	FREE
CANOPENER	1.1	512K/3.0		FREE
CANVAS	3.0	1MB/6.0.2	1/92	*
CAPTURE	4.0	128K/4.1		\$30
CARBON COPY MAC	2.0	1MB/6.0.5	*	
CAT III	1.1	1MB/6.0	*	
CHECKLIST	2.0	1MB/6.0	2/92	*
CINEMATION	1.0	4MB/6.0.7		NA
CLARIS CAD	2.0.2	2MB/6.0		\$79
CLARISWORKS	1.0	1MB/6.0.5		NA
CLICKPASTE	2.1	1MB/6.0	*	
CMS UTILITIES	7.0	2MB/7.0		\$25
COLOR MACCHEESE	2.07	1MB/6.0.5		\$15
COLORSTUDIO	1.5	4MB/6.0.5	*	
COMPUSERVE INFORMATION MANAGER	1.5	1MB/4.1	*	
COMPUSERVE NAVIGATOR	3.0.4	512K/4.1	*	
CONCERTWARE+	4.0	512KE/4.2		\$15
CONNECTIONS	2.0	2MB/6.0.5		NA
CORRECT GRAMMAR	2.0	1MB/4.2	*	
DATA CLUB CLASSIC	2.0	2MB/6.0	*	
DATA SHAPER	1.2	1MB/6.0		\$40
DECK	1.03	2MB/6.0.7	4/91	FREE
DELTA GRAPH PRO		2MB/6.0.5		\$75
DELUXEMUSIC CONSTRUCTION SET	2.5	512K/6.0.2	*	
DESCARTES	1.04	2MB/6.0.3	6/91	FREE
D.E.S. DOCUMENT EXCHANGE SYSTEM	4.1	1MB/6.0	*	
DESIGNCAD	3.0	2MB/6.0.5	*	
DESIGNCAD 2D/3D	3.0	2MB/6.0.5		\$50
DESIGNSTUDIO	2.0	1MB/6.0	11/91	*
DESKPAINT	3.07	1MB/6.0.5		\$19.95
DIGITAL DARKROOM	2.0	1MB/6.0.4		\$80
DISK DOUBLER	3.7	1MB/6.0.2		\$15
DISKEXPRESS II	2.07	1MB/6.0	*	
DISKFIT PRO	1.1	1MB/6.0	7/91	\$32.50
DISKTOP	4.01	1MB/6.0	*	
DISPLAY ADBUILDER	1.1	1MB/6.0.3	*	
DOLLARS & SENSE	5.0	512KE/3.2	*	
DOUBLE HELIX	3.5	1MB/6.0		\$99
DREAMS	1.1	1MB/6.0.2	*	
DYNAPERSPECTIVE	2.3	2MB/6.0.5		\$149

continues

V. = version #. Req. = min. RAM and system software required. * = last time (in the past year) this or an earlier version was reviewed. \$ = cost of update to registered owners. NA = first version, not applicable. * = contact your dealer for update policy. Blue = new version. Yellow = reviewed product.

Mathematics Visualized. Problems Solved.



Theorist® is an interactive symbolic math and graphing program with a graphical user interface that makes mathematics easy-to-use. It is powerful enough for the advanced scientist, engineer, and educator, yet intuitive enough for the beginning student.

"[Theorist] is without question the easiest symbolic math program to use. ... In terms of interface design, Theorist is the best Macintosh symbolic math program... For mainstream science and engineering practice, Theorist will likely be the program that finally brings the advantages of symbolic computation to the average Macintosh user."

— MacWorld magazine, May 1990.

— Five mice review, MacUser magazine, June 1990. ★★★★★

"Theorist... surpasses the highly rated Mathematica... in interface and execution."

— MacUser magazine, Editor's Choice Award, Best Math Program of 1989.

Equations Made Easy.

$$\delta I_M = \frac{1}{2} \sum_n m_n \int_{-\infty}^{\infty} dp \left[-g_{uv}(x_n(p)) \frac{dx_n^u(p)}{dp} \frac{dx_n^v(p)}{dp} \right]^{-1/2}$$

To incorporate typeset quality equations into your technical documents quickly and easily, get Expressionist®, the leading equation editor for the Macintosh.

"An excellent toolkit that all technical people should have at their disposal."

— Jean-Louis Gassée, former Apple Computer Inc. executive.

Call 1-800-UC-R-MATH
for demo disks, a video, and more info.



Prescience

939 Howard St. #102, San Francisco, CA 94103, FAX: (415) 882-0530

Circle 179 on reader service card.

PRODUCT	V.	REQ.	*	\$
DYNODEX	2.0	1MB/6.0	2/92	\$25
EASY COLOR PAINT	2.0	1MB/6.0.2	*	
EMPOWER II	4.0.7	2MB/4.2	*	
ENCORE	2.0.7	2MB/6.0.2	*	
ENHANCE	2.0	2MB/6.0.3	11/91	\$50
EVOLVE	1.1	2MB/5.3		\$25
EZ VISION	1.0	1MB/6.0.3	NA	
FASTBACK PLUS	2.6	1MB/6.0	*	
FAST FORMS	2.0	1MB/6.0		\$25
FASTLABEL	2.02	1MB/6.0	*	
FASTTRACK	1.5	512KE/5.5		\$20
FAXGATE (MICROSOFT MAIL)	3.0	1MB/6.0.3	SW/WORKSTATION	
FAXGATE (QUICKMAIL)	1.5	1MB/6.0.5	SW/WORKSTATION	
FILEGUARD	2.7	1MB/4.2		\$18
FILEMAKER PRO	1.02	1MB/4.2		FREE
FILEVISION V	1.1	1MB/6.0.2	*	
FILMMAKER	2.5	5MB/6.0.3	3/91	*
FINALE	2.6	1MB/6.0.2		FREE
FINDSWELL	2.01	512KE/3.2	*	
FLEXICAD	2.20	5MB/6.0.4	*	
FONTMONGER	1.0.5	2MB/6.0.2	10/91	FREE
FONTGRAPHER	3.3	1MB/4.0.3	*	
FONTSHARE	2.2	1MB/6.0		FREE
FONTSTUDIO	2.0	1MB/6.0.5	*	
FORM 2	2.0	2MB/6.0	*	
FOXBASE+/MAC	2.01	1MB/6.0		FREE
FRAMEMAKER	3.0	1MB/6.0	*	
FREEDOM OF PRESS LIGHT	3.0.1	2MB/6.0.3		FREE

PRODUCT	V.	REQ.	*	\$
FREEDOM OF PRESS PROFESSIONAL	3.0.2A	4MB/6.0.3		\$250
FULL IMPACT	2.0	1MB/6.0		\$50
FULLWRITE PROFESSIONAL	1.5	2MB/6.0.2	*	
GENERIC CADD	1.1	1MB/6.0.5	*	
GEOQUERY	3.0	1MB/6.0	*	
GOFER	2.0	1MB/4.1		\$25
GRACELAN	2.0	1MB/6.0.5	*	
GRACELAN UPDATE MANAGER	1.0	2MB/6.0.5	NA	
GRAMMATIK MAC	2.05	1MB/6.0		\$15
GREAT GANTT	1.4	1MB/6.0	*	
GREAT PLAINS ACCOUNTING SERIES	6.0	1MB/4.2	*	
GREATWORKS	1.0	1MB/6.0.2	NA	
GUIDE	2.0	512K/4.1		\$50
HAND-OFF II	2.2.1	1MB/6.0		FREE
HYPERCARD	2.1	1MB/6.0.3		\$49
HYPERDA	2.0	512K/3.2	*	
ICON-IT	2.1	1MB/6.0.2	*	
IF-X FORMS DESIGNER	1.1	1MB/6.0		FREE
IGOR	1.2	2MB/4.1		\$35
IMAGESTUDIO	1.7	1MB/6.0		\$99
INFINI-D	1.1	4MB/6.0.4	9/91	FREE
INFOLOGIC ENVELOPE	1.1C	512KE/4.0		\$5
INITPICKER	2.02	1MB/6.0		\$10
INSIDE OUT	II	1MB/6.0.2	*	
INSIGHT EXPERT ACCOUNTS PAYABLE	2.1.1	1MB/6.0	*	

PRODUCT	V.	REQ.	*	\$
INSIGHT EXPERT ACCOUNTS RECEIVABLE	2.2	1MB/6.0.2	*	
INSIGHT EXPERT GENERAL LEDGER	2.2	1MB/4.2		\$99
INSPIRATION	3.0	1MB/4.2	12/91	*
INSTANT-EXPERT PLUS	2.0	1MB/5.0		FREE
INTERFACE RAVE	2.0.5	2MB/6.0.4		FREE
INTOUCH	1.1	512KE/4.2	5/91	FREE
ITHINK	2.0	2MB/6.0.2		\$149
KALEIDAGRAPH	2.1	2MB/6.0.5	9/91	\$20
KIWIENVELOPES	3.1	512KE/4.1	*	
LABVIEW	2.2	4MB/6.0.3	10/91	*
LAPLINK MAC III	3.2	512K/2.0		FREE
LAPLINK MAC PLUS III	3.0	512K/2.0	*	
LASERPAINT COLOR II	1.02	1MB/6.0.3		FREE
LETRASTUDIO	2.0	2MB/6.0	*	
LIGHT CHECKBOOK ACCOUNTING	2.0	1MB/6.0.3	*	
LIGHTSPEED COLOR LAYOUT SYSTEM	2.5	1MB/6.0.5	*	
MACANALYST	3.1	2MB/6.0	*	
MACARCHITRION	5.5	2MB/6.0.3	*	
MACDRAFT	2.1	1MB/6.0.2	*	
MACDRAW II	1.1	1MB/6.0	*	
MACDRAW PRO	1.0	1MB/6.0.5	11/91	\$99
MACENVELOPE	5.1	1MB/4.2		\$29.95
MACENVELOPE PLUS	2.0	512KE/3.2		\$50
MACFLOW	3.5.4	1MB/6.0		\$30

HIGH RESOLUTION IS JUST

PERSONAL TYPESETTERS

LaserMaster 1200
\$16,995

LaserMaster 1000
\$6,995

- ▶ 1200 and 1000 dpi plain-paper output
- ▶ Letter, legal, A3, A4, and 11" x 17" at up to 20 ppm
- ▶ 135 premium Type 1 fonts
- ▶ RISC-based processor provides unmatched speed
- ▶ Complete PostScript® language compatibility

LaserMaster's 1200 and 1000 Personal Typesetters offer Macintosh® freedom at an affordable price. Freedom from the expense and hassle of service bureaus. Freedom from paper size limitations and limited typeface choices. Freedom from unproductive down-time while you wait for your printer to print. And with camera-ready copy at just pennies a page, you'll see savings just as quickly as your printed page.

POWERFUL NETWORK PRINTING

LaserMaster 400XL
\$11,995

- ▶ Powerful 400 dpi printing for your entire office
- ▶ High duty cycle, 20 ppm work horse
- ▶ Letter, legal, A3, A4, and 11" x 17"
- ▶ 135 premium Type 1 fonts
- ▶ Complete PostScript language compatibility

Increase resolution, decrease delays, and add flexibility to your company's Macintosh network with a **LaserMaster 400XL** printer. The 400XL's RISC-based processor dramatically increases print speed, while its powerful engine handles the heavy printing demands of your entire networked work group. And its paper flexibility is great for newsletters, posters, spreadsheets, CAD drawings, and bleeds.

800 DPI IS BUSINESS RESOLUTION™

LaserMaster 800
\$4,995

LaserMaster 800/4
\$3,795

- ▶ 800 dpi high resolution at an affordable price
- ▶ Legal, letter, and A4 paper capabilities
- ▶ 135 premium Type 1 fonts
- ▶ Unsurpassed speed from a business printer
- ▶ Complete PostScript language compatibility

With the **LaserMaster 800 and 800/4**, LaserMaster has harnessed its patented TurboRes technology to create powerful high-resolution business printers that will make your reports dazzle, your presentations sparkle, and even your most basic correspondence easier to read. Best of all, you can get high-performance 800-dpi Macintosh printing for the same price as a regular 300 or 600-dpi laser printer—or less.

PRODUCT	V.	REQ.	★	\$
MACFORTRAN II	3.1	4MB/6.0.3		\$99
MACGLOBE	1.0	1MB/6.0.4	*	
MACLINKPLUS/PC	5.0	1MB/6.0.2	*	
MACMONEY	3.5	512K/4.0		\$12
MACPAINT	2.0	512K/3.2		\$25
MACPALETTE II	2.2	1MB/6.0.5	*	
MACPHONEBOOK	3.0	1MB/6.0	9/91	*
MACPLOT PROFESSIONAL	3.7.4	1MB/6.0.5	*	
MACPLOT STANDARD	3.7.4	1MB/6.0.5	*	
MACPROJECT II	2.5	1MB/6.0		\$99
MACRECORDER	2.03	512K/3.2	*	
MACRENDERMAN	1.1	5MB/6.0.5		\$75
MACROMIND DIRECTOR	3.0	2MB/6.0.5		\$195
MACSCHEDULE	2.5	1MB/6.0		\$30
MACSCHEDULE PLUS	1.0.5	1MB/6.0		FREE
MACSPIN	3.01	512K/4.3	*	
MACTERMINAL	3.0	512K/3.2		\$65
MACTOOLS DELUXE	1.2	1MB/6.0	*	
MACTOPS	3.1	1MB/6.0.5	*	
MACWRITE II	1.1	1MB/6.0		FREE
MANAGING YOUR MONEY	4.0	1MB/6.0.3	*	
MANAPRO GENERAL LEDGER	3.1	1MB/6.0	NA	
MAPGRAFIX	2.1.1	4MB/6.0.3	*	
MARCOPOLO	1.1	1MB/6.0		FREE
MAPLE V		2MB/6.0.7	*	
MARKET MASTER	3.0	1MB/6.0.3		\$95
MARKUP	1.03	1MB/6.0		FREE
MASTERFINDER	1.1	1MB/6.0.5	6/91	*

PRODUCT	V.	REQ.	★	\$
MASTERJUGGLER	1.57	512K/6.0		\$15
MASTERPLAN	1.03	512K/6.0.5		FREE
MASTER TRACKS PRO	4.52	1MB/6.0.2	*	
MATHCAD	2.06	1MB/6.0.2		FREE
MATHEMATICA	2.0	1MB/6.0	*	
MATHTYPE	2.1.1	512K/6.0.2	*	
MATHWRITER	2.0	2MB/6.0.5	*	
MEDIATRACKS	1.01	1MB/6.0.2		FREE
METAPICT	2.0	512K/4.5		\$69
META PRO	2.03	1MB/6.0	*	
MICHAEL'S DRAW	1.0	1MB/6.0.5	12/91	NA
MICROPHONE II	3.0	512K/4.2	*	
MICRO PLANNER MANAGER	1.0	1.5MB/4.0	*	
MICROSOFT EXCEL	3.A	1MB/6.0.2	9/91	*
MICROSOFT FILE	2.0	512K/3.2	*	
MICROSOFT MAIL	3.0	1MB/6.0.2	8/91	*
THE MICROSOFT OFFICE	1.5	1MB/6.0.2		\$129
MICROSOFT POWERPOINT	2.01	1MB/6.0		FREE
MICROSOFT PROJECT	1.1	1MB/6.0.4	11/91	NA
MICROSOFT WORD	4.0d	512K/3.2		\$129
MICROSOFT WORKS	2.0e	512K/6.0	*	
MINDLINK	2.0	1MB/6.0	*	
MINDWRITE	2.1	512K/4.2	*	
MINICAD+	3.1	1MB/6.0	7/91	*
MOCKPACKAGE PLUS UTILITIES	4.4	512K/3.2		\$15
MODELSHOP II	1.1	1MB/6.0.2		FREE
MORE	3.1	1MB/4.1	*	
MR. FILE	1.1.1	1MB/4.2		FREE


PRODUCT	V.	REQ.	★	\$
MULTI-AD CREATOR	3.0	2MB/6.0.3	*	
MULTILEDGER	1.1	512K/3.2		\$75
MUSICPROSE	2.1	1MB/6.0		FREE
MUSIC PUBLISHER	2.5.2	1MB/6.0	12/91	\$15
MYADVANCEDMAILLIST	3.0	512K/4.1	*	
MYDISKLABELER III	3.0.4	1MB/6.0	*	
M.Y.O.B.	2.0	1MB/6.0	10/91	*
MYTIMEMANAGER	4.0	1MB/6.0.3	11/91	*
NETMINDER ETHERNET	2.0	2MB/6.0	*	
NETWORK BUNDLE FOR THE MAC	3.0	512K/3.2	*	
NETWORK SUPERVISOR	2.0	2.5MB/6.0.3	*	
NISUS	3.05	1MB/6.0.2	*	
THE NORTON UTILITIES FOR THE MACINTOSH	1.1	1MB/4.2		\$19
NOW UTILITIES	3.0.1	1MB/6.0.4	2/92	\$49
NUBASE FOR THE MAC	1.3	1MB/4.1	1/92	\$75
OCTAVO TYPECHART	1.5	1MB/6.0.4	7/91	FREE
OMNIPAGE	3.0	4MB/6.0		\$25
OMNIS 5	1.2	1MB/6.0	*	
ONCUE	1.3	512K/4.2		\$10
ON LOCATION	2.0	1MB/6.0.5		\$25
ON SCHEDULE	2.0	1MB/3.0	*	
PANORAMA	2.03	1MB/6.0	*	
PAYROLL	4.0	2MB/6.0.5		\$89
PERFORMER	3.61	2MB/6.0.2	*	
PERSONAL PRESS	1.01	1MB/6.0.2		FREE

continues

ONE OF THE ADVANTAGES.

SEE US AT
MACWORLD
BOOTH #733

AFFORDABLE PRINTING POWER



MaxWriter 400
\$2,195

400 dpi resolution in a desktop machine
Host-based architecture
Unmatched affordability
50 premium Type 1 fonts
Complete PostScript language compatibility

Don't let a tight budget limit your choices of a high-performance laser printer. The **MaxWriter™ 400** provides nearly twice the resolution of standard 300-dpi laser printers at an amazingly affordable price. And while the MaxWriter 400 is small enough to fit on your desktop, it gives you the speed, font versatility, and power flexibility usually found only in larger, more expensive printers.

ENHANCE YOUR LASERWRITER



LaserMaster 800KLW
\$2,695

- ▶ 800 dpi from your *current* laser printer
- ▶ RISC-based processor accelerates print speed
- ▶ Six megabytes of high-speed memory
- ▶ 50 or 135 premium Type 1 fonts
- ▶ Complete PostScript language compatibility

LaserMaster's 800KLW controller transforms your existing LaserWriter™ II into a printing powerhouse. From delicate serifs to intricate halftones, every detail of your printed documents will benefit from improved 800-dpi quality. And with its additional memory and specialized processor, you get the power to tackle your most complex PostScript documents **fast**.

Sure, LaserMaster printers and personal typesetters give you the unsurpassed high-resolution PostScript output that has made us famous. But that's just one of the advantages of our high-performance printing machines.



To learn more about how you can harness LaserMaster's speed, flexibility, and creativity for all your Macintosh II printing needs, call us today at:

800-950-6868 Dept. 01P

or call (612) 944-9330

LM LASERMASTER™
CORPORATION

More: Speed, Fonts & ResolutionSM

Yes! All text was printed on a
LaserMaster Personal Typesetter.

© 1991 LaserMaster Corporation, 6900 Shady Oak Road, Eden Prairie, MN 55344. The LM logo and TurboRes are registered trademarks and LaserMaster and MaxWriter are trademarks of LaserMaster Corporation. PostScript is a registered trademark of Adobe Systems, Incorporated. Macintosh and LaserWriter are registered trademarks of Apple Computer, Inc. All other product names or brand names are trademarks of their respective holders. Specifications subject to change.

Circle 182 on reader service card

Great Performance

Call MacFriends Today to learn how one of our Great Performance Macs can make you a stellar performer!

Mac IIci \$2588
CPU price in pkg.
lease for just \$156/mo.

5 YEAR HD WARRANTY
Ask About QuickKey
Extended Service

• 8 MB fast 80ns RAM
• 234 MB Hewlett Packard HD
• Cache Card
• 14" Color Monitor w/256 colors
• Extended Keyboard
• E-MACHINES
Total pkg. price \$4739

Mac Quadra 700 \$4488
CPU price in pkg.
lease for just \$267/mo.

• 8 MB fast 80ns RAM
• 210 MB Quantum HD
• Extended Keyboard
• E-MACHINES
• Expanded Video RAM for 24 Bit Color
Total pkg. price \$8099

Great performance at these prices is music to your ears!

800 331-1322
24 hour QUICKKEY (503) 286-8710 Local: (503) 286-9350

MacFriends
AMERICA'S MAC STORE

PRODUCT	V.	REQ.	*	\$
PICTURE	1.0	512K/6.0	NA	
PHONENET LIAISON	3.0	1MB/4.2	\$75	
PHOTOMAC	1.5	2MB/6.0.3	\$75	
THE PHRASE THESAURUS	2.0	1MB/6.0	FREE	
PICTUREBOOK+	1.0	1MB/6.0	*	
PICTUREPRESS	2.0	2MB/6.0.4	*	
PIXELPAINT	2.1	2MB/4.1	*	
PIXELPAINT PRO	2.01	4MB/6.0.5	9/91	\$125
PLAINS & SIMPLE	1.06	1MB/3.2	*	
PLANISOFT	1.3	512K/4.2	\$48	
POSTERWORKS	2.1	2MB/6.0.3	*	
POWERDRAW	3.0	1MB/6.0	*	
POWERSTATION	2.55	512K/4.1	*	
PRACTICA MUSICA	2.2	512K/3.2	*	
PRESENTER PROFESSIONAL	1.0	5MB/6.0.5	NA	
PRO CITE	2.0	1MB/6.0.2	\$95	
PRODIGY	3.1	1MB/6.0	FREE	
PROFESSIONAL COMPOSER	2.3	1MB/6.0.3	FREE	
PROGRAPH	2.5	2MB/6.0	\$49.99	
PROPSFORMS	2.0	1MB/6.0.3	FREE	
PROTOTYPYER	3.0	1MB/4.1	\$99	
PUBLISH IT	1.2	512KE/5.0	*	
PUBLISH IT EASY	2.0	1MB/6.0	*	
PYRO	4.0.1	512K/4.1	\$15	
QUARKXPRESS	3.1	2MB/6.0.5	*	
QUICKDEX II	1.4D	1MB/6.0.5	*	
QUICKEN	3.0	1MB/6.0.5	12/91	*
QUICKKEYS	2.1	1MB/6.0.2	*	
QUICKLETTER	1.1.5	1MB/6.0	\$25	
QUICKMAIL	2.5	512KE/3.2	*	
QUICKSHARE	2.0	512KE/3.2	*	
QUICKSHOT	2.1	1MB/4.2	\$5	
RAGTIME 3	3.1	2MB/6.0	\$150	
RAY DREAM DESIGNER	1.1	4MB/6.0.5	*	
READ-IT OCR PERSONAL	3.0.A	2MB/6.0.5	\$49	
READ-IT OCR PROFESSIONAL	3.0	2MB/6.0.3	*	
READYSETGO	4.5	1MB/6.0	*	
RESOLVE	1.0	1MB/6.0.5	NA	
RETROSPECT REMOTE	1.3	1MB/6.0	*	
RIGHTWRITER	3.1	512K/3.0	\$29.90	
RIVAL	1.1.8	2MB/6.0	FREE	
RUNPC	3.1.2	512K/6.0.4	NA	
SAM	3.0	1MB/6.0	\$29	
SCHEDULEMAKER	3.01	1MB/6.0	\$25	
SCULPT 3D	2.0.6	8MB/6.0.5	FREE	
SCULPT 4D	2.0	8MB/6.0.5	\$1000	
SHADOWWRITER	1.1	2MB/6.0.2	FREE	
SILVERLINING	5.31	1MB/6.0	*	
SKETCH	1.0	5MB/6.0.5	NA	
SMALL BUSINESS ACCOUNTING SYSTEM	2.1	512K/4.1	FREE	
SMART ALARMS	3.07	1MB/6.0.2	11/91	\$28
SMARTCOM II FOR THE MAC	3.3	1MB/6.0.5	*	
SMARTFORM DESIGNER	1.1	1MB/6.0	FREE	
SMARTSCRAP & THE CLIPPER	2.1	1MB/6.0.3	\$40	
SNAP	3.1.3	1MB/3.0	*	
SOUND DESIGNER II	2.01	2MB/6.0.5	*	
SPELLING COACH PROFESSIONAL	3.1	512KE/4.2	*	
SPELLSWELL	2.2	512K/3.2	\$20	
SPINNAKER PLUS	2.0	2MB/6.0	\$45	
STATUS MAC	2.0	1MB/6.0	*	

PRODUCT	V.	REQ.	*	\$
STEPPING OUT II	2.02	1MB/4.1	FREE	
STICKYBUSINESS	1.4	512KE/6.0.3	*	
STRATAVISION 3D	2.0	2MB/6.0.3	\$99	
STUDIO/8	2.0	2MB/6.0.5	6/91	\$30
STUDIO/32	1.1	5MB/6.0.5	4/91	FREE
STUFFIT CLASSIC	1.6	1MB/6.0	*	
STUFFIT DELUXE	2.0	1MB/6.0	7/91	FREE
SUITCASE II	2.0	512K/4.1	\$25	
SUM II	2.1	1MB/6.0	*	
SUPER 3D	2.5	2MB/6.0.2	*	
SUPERANOVA	1.1	1MB/6.0.2	FREE	
SUPERCARD	1.5	1MB/6.0.5	\$55	
SUPERGLUE II WITH GLUENOTES	2.01	512K/6.0	\$25	
SUPERLASERSPOOL	2.0.2	1MB/6.0	\$30	
SUPERSPOOL	5.0	512K/4.1	\$30	
SWIVEL 3D	2.0	1MB/6.0.5	\$75	
SWIVEL 3D PRO	2.0	4MB/6.0.5	\$150	
SYSTAT	5.1	2MB/6.0	*	
TASK MONITOR	4.0	1MB/6.0.3	FREE	
TASTE	1.01A	2MB/6.0.2	FREE	
TAXVIEW 1040 PROFESSIONAL	2.12	2MB/6.0.5	\$250	
TEMPO II PLUS	2.0.1	1MB/4.2	\$39.95	
TEXTPERT	3.01	1MB/6.0	FREE	
TEXTSCAN	4.0	1MB/6.0	\$75	
THEORIST	1.1	1MB/6.0	*	
THINK C	5.0	2MB/6.0	\$89	
THINK PASCAL	4.0	1MB/6.0	\$69	
THOUGHTPATTERN	1.2.2	1MB/6.0	FREE	
THUNDERWORKS	1.2	1MB/6.0.2	*	
TILES	1.0	2MB/6.0.4	NA	
TIMBUKTU	4.0.1	1MB/4.1	*	
TIMBUKTU/REMOTE	3.0	1MB/4.1	*	
TIMESLIPS III	2.0	1MB/6.0.2	*	
TOPDOWN	3.0	1MB/6.0.4	10/91	*
TOPSCAN PLUS	1.0	2MB/6.0.5	NA	
TOUCHBASE	2.0	1MB/6.0.5	9/91	*
TRAPEZE	2.1	1MB/6.0.2	FREE	
TRUEFORM	2.1	1MB/6.0	FREE	
TSCRIPT	3.0	1MB/6.0	\$60	
TYPEALIGN	1.04	1MB/6.0	FREE	
TYPEREUNION	1.01	1MB/6.0	FREE	
TYPESTYLER	2.0	2MB/4.0	\$25	
ULTRAPAINT	1.03	1MB/6.0.2	FREE	
UNIVERSAL SOFTPC	2.5	2MB/6.0	\$99	
VENTURA PUBLISHER	3.2	2MB/6.0.5	\$59	
VERSACAD/ MACINTOSH EDITION	4.0	2MB/6.0.5	\$295	
VERSATERM	4.5	1MB/6.0.3	\$20	
VIDEOPAINT	1.1	2MB/6.0.3	\$35	
VIREX	3.5	1MB/4.2	\$15	
VIRTUAL 2.0 FOR 030	2.04	1MB/4.2	FREE	
VIRTUAL 2.0 FOR MAC II	2.04	1MB/4.2	FREE	
VIRTUAL 2.0 FOR MAC PLUS	2.04	1MB/4.2	FREE	
VISION	1.32	2MB/6.0.3	\$29	
WHITE KNIGHT II	1.12	1MB/6.0.2	*	
WILLMAKER	4.0	512KE/4.2	3/91	\$18.50
WINGZ	1.1	1MB/6.0	FREE	
WORD FINDER	2.0	512K/3.2	*	
WORDPERFECT FOR THE MACINTOSH	2.0.3	1MB/6.0.3	7/91	\$89
WORDPERFECT OFFICE	3.01	1MB/6.0.5	12/91	NA
WORKSPUS SPELL	2.0	1MB/6.0.3	\$35	
WRITENOW	2.2	512K/4.2	\$49	

IF YOU CAN'T SEE THE DIFFERENCE, WHY PAY THE DIFFERENCE?



THE POPULAR \$30,000 PRINTER.

THE \$10,999* RASTEROPS CORRECTPRINT 300.



INTRODUCING THE RASTEROPS CORRECTPRINT 300.

THE ONLY TRULY AFFORDABLE PHOTOREALISTIC PRINTER.

Until now, only high priced printers gave you high quality color output.

But here's the new RasterOps CorrectPrint 300. An incredibly inexpensive printer that uses dye sublimation technology at 300 dpi to give you dramatic, continuous tone color at every pixel, without dithering.

A printer that turns out low cost, professional-looking comps and proofs.

A printer that uses a 33-Mhz RISC processor to get the job done fast.

The new CorrectPrint 300 even includes PostScript®. And it has four networking ports for shared environments.

Wouldn't a printer like this, at a price like this, make a tremendous difference in your company?

Find out today. See your dealer or call 1.800.SAY.COLOR.

RASTEROPS®
THE ART & SCIENCE OF COLOR™

*Suggested retail price. Memory expansion kit required.



OCEANOGRAPHER HANS JANNASCH,
LIKE 9 OUT OF 10 MAC® SPREADSHEET USERS,
CHOSE MICROSOFT EXCEL.

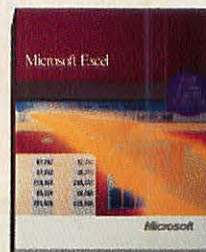
Dr. Jannasch says, "Plankton's connected to the little fish. Little fish are connected to the big fish. And everything's connected by Microsoft Excel."

He's simplifying, of course.

But that comes naturally to Microsoft® Excel users. Because whether you're working on chemical analysis or cost analysis, Microsoft Excel can simplify just about anything.

As proof we offer the Toolbar.™ It turns multi-step jobs into one-button solutions, making everyday tasks that much easier. For example, to add a range of numbers just hit Autosum.™ And it's done.

If you're in the middle of a jumbo spreadsheet, you can use outlining to collapse your worksheet so you can view or print only what you need. Nothing more. Nothing less.



If you're working on two worksheets, or 22, or even 222, don't worry. You can easily consolidate them all into one.

And after you've found The Answer, you can communicate it beautifully. For instance, you can use any of Microsoft Excel's 68 charts. To add depth, choose from the 28 3-D versions—any of which will make you look 2X as good.

Now you're thinking, "How slick. How smart. How did they ever come up with all that?" Well, we had help. From users like Hans Jannasch of the Monterey Bay Aquarium Research Institute. And users like you. People whose input has helped make Microsoft Excel the spreadsheet standard since 1985.

For more information, just give us a call at (800) 541-1261. Ask for Department X38. And connect yourself with Microsoft Excel.

Microsoft®

It's time your Macs started running with a faster crowd.

First, we made it possible for Mac users to talk to VAX/VMS systems. We did it better than anyone. And still do.


Now, we've taken that same expertise and opened up another new world — between Macintosh and UNIX. With AlisaTalk for UNIX. Nothing less than the fastest, most powerful AppleShare server software available for the Apple Macintosh family.

At last, Macintosh users can harness the raw speed and power of state-of-the-art RISC processors from

Sun, Digital, and IBM, combined with the proven reliability of UNIX computer systems. And enjoy unrestricted file and printer sharing, unrivaled terminal emulation, even electronic mail.

For more information, talk to us about AlisaTalk for UNIX.

It's the quickest way to put your Macs in the fast lane.

Alisa Systems  Inc.
We keep everybody talking.

221 East Walnut Street, Suite 175, Pasadena, CA 91101, (800) 628-3274, In California, (818) 792-9474

© 1991 Alisa Systems, Inc. This advertisement refers to various products by their trade names. In most, if not all cases, these designations are claimed as trademarks or registered trademarks by their respective companies.



Lab Notes

Of E-Mail Testing and Macros

BY TIM WARNER

E-MAIL WORKS WELL MUCH OF THE time, but there are also common problems, from lost mail to dialog boxes that say "unable to read message" or "the server is busy; try again later." Somehow, in the real world, these problems seem to happen only when you need to get something done. Put an E-mail package up on a laboratory bench, isolated from the complexities of the company network, and the package behaves like a prince.

For "Opening Up E-Mail," in this issue, Macworld Lab set out to duplicate how electronic-mail packages work on a real-world network with varying volumes of network and server use. We knew that any real-world scenario would be something of an abstraction—every office has a different pattern of network and E-mail use depending on many factors, including the size of the network, the number of people working at the time, how hard they are working, what kind of work they do, and so on. How can the real world be duplicated meaningfully in a test setting? Complicated networks frequently have traffic generated by network modems, workgroup software, and diagnostic software, for example. With so many sources of traffic, we had to make sure we were testing E-mail and not the rest of the network. Armed with that knowledge, we designed two test procedures to measure electronic-mail performance.

Measuring Performance

FIRST, WE WANTED TO FIND OUT HOW E-mail packages perform when accessed by a single user, a common E-mail scenario. And because network traffic is sporadic, it was important to see how one person would be affected when there were

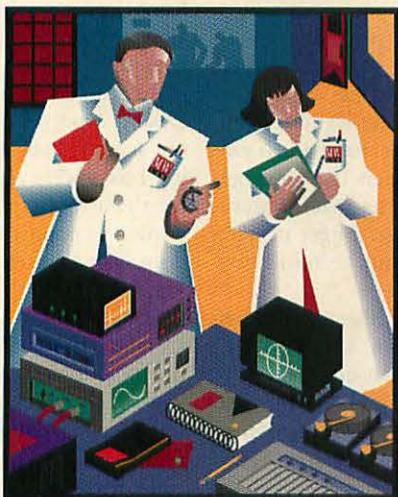
varying amounts of server use—from absolutely none to very heavy use. We used three Macintoshes in our single-user setup, which was modeled on Microsoft's comparative test suites. One computer represented a user by sending, receiving, deleting, and saving electronic messages. Another computer acted as the server, storing and routing messages between users. A third computer generated additional E-mail traffic to simulate a volume of messages (also called a load) moving back and forth between other

network users and the server. We tested this setup four ways: with no load, with a normal load of E-mail messages, with a heavy load of E-mail server use, and with heavy AppleShare network use. We timed how long each of the five E-mail packages in the feature took to send, read, delete, and save messages under varying loads.

Second, the Lab wanted to uncover the speed and reliability of the E-mail server. This required a multiuser test, which was inspired by, although not modeled after, tests done at CE Software. We used six computers for this setup, with each sending the same complicated string of messages and enclosures to and from the mail server. This test was also designed to show if the E-mail packages could handle up to six users concurrently. We hoped to see if any messages got lost or damaged in the process.

Once the testing procedures were established, the problem remained of how to generate consistent network and mail-server loads to fairly measure each electronic-mail program. We briefly considered using a network utility to transfer random packets over the network, but

continues



From
Dull
to

Dazzling

with

Effects
SPECIALIST™

...our dynamic effects
will add
punch and excitement
to any document or
project.



Includes these great features:

- Use any font in your system, PostScript™ or non-PostScript
- 120 different effects, each with its own modifiers
- Easy to learn...easy to use
- Imports and exports PICT and EPSF files
- WYSIWYG
- Kerning, scaling, color and background generator
- Rotating and skewing
- Rulers, group and ungroup

FREE Adobe TypeManager™ and
13 Adobe® fonts with purchase

Call now for free Demo Disk

POSTCRAFT
INTERNATIONAL INC.

27811 Avenue Hopkins, Suite 6
Valencia, CA 91355 • (805) 257-1797

Circle 200 on reader service card.

It'll make you hog-wild about System 7.

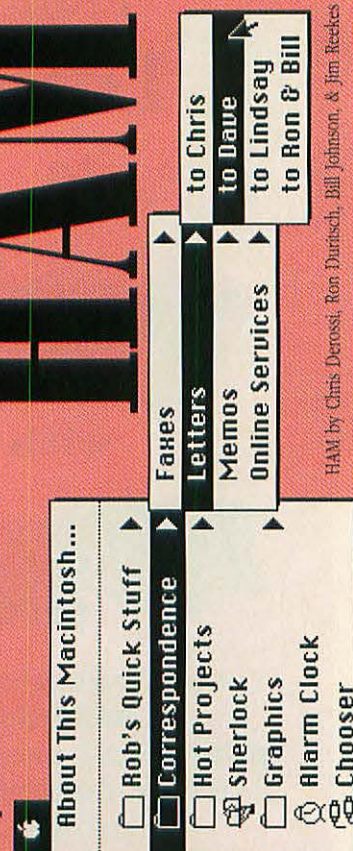
Take full advantage of System 7's hot new Apple menu with HAM, which displays folders as hierarchical submenus so you can open the items inside without double-clicking every folder in the path. But that's not all! HAM also:

- keeps track of recently used items
- lets you re-order the Apple menu
- offers multiple application & document launch
- automatically restarts to previously opened files

microseeds
813-882-8635

5801 Benjamin Center Drive, Suite 103
Tampa, FL 33634 fax 813-884-5941

Apple, the Apple logo, and Macintosh are registered trademarks of Apple Computer, Inc. HAM is a trademark of Microseeds Publishing, Inc. © 1991 MPT



HAM by Chris Derossi, Ron Durtisch, Bill Johnson, & Jim Reekes

LAB NOTES

quickly realized such an approach would not have tested the E-mail server at all because such utilities do not interact with the server. Also, network utilities are primarily diagnostic tools that do not lend themselves to simulating the sporadic nature of a real network, where people randomly print, send E-mail, use AppleShare servers, and play network games.

Macro Hell

FOR CONSISTENCY AND EASE, WE DECIDED to create macros that would simulate real-world E-mail use over the network by, among other things, composing messages and sending, reading, deleting, and saving them. Because we needed to have our macros pause between some steps—to let the computers catch up with E-mail operations—we at first looked for a program that would let us simply edit the macros to add the pauses. But what seemed simple was much more difficult than we imagined.

Macros that worked flawlessly on a single system in the network buckled repeatedly under the stress of background traffic created by the computer generating the loads. In some cases, when an E-mail program waited for the server and displayed a dialog box saying the server was busy, the arrow cursor scuttled across the user's screen as macros continued to execute at full speed. When the message transfer was complete, the macros were several steps ahead and no longer in sync with the E-mail program; the result was complete havoc.

Early in our testing, these problems forced us to switch from AutoMac III, which lacks a flexible wait command, to QuickKeys², which has an extension that waits for a window or dialog box to open or close before executing the next macro step. (Although we gained some flexibility, we lost AutoMac's ability to call other macros, the way some programs call subroutines, a technique that simplifies software design and debugging.) Then we timed the pauses needed for transferring messages and added that lag time to our macros. In other cases we added macro steps that waited for dialog boxes to disappear. Writing the macros, which we expected to take about 5 hours per program, ballooned to 16 hours per program as we rewrote them over and over again.

When we attempted to really challenge each E-mail server by sending and retrieving multiple messages with enclosures from the six users to the server at the same time, the macros proved impractical. The time a message took to transfer varied by as much as 30 seconds under different loads; at times, unexpected dialog boxes demanded user feed-

back. This inconsistency made it impossible to use identical macros on all workstations; the macros got out of sync, and made the test results invalid. In the end, to our disappointment, we settled for having each of the six computers send a single message, with an enclosure, to the server. Despite the problems, we believe our test set—based on vendor tests, Macworld Lab experience, and a little common sense—is a good representation of how most of our readers work.

If any of the macro programs had been more like a programming language, we could have written subroutines to handle the inconsistencies and variable durations of operations. With a program that had conditional operators (such as IF-THEN-ELSE statements), the ability to go to a specific step, short variable strings, and WHILE loops with counters, we could have solved our problems easily and saved a lot of time.

Instead, we spent three full days tweaking the QuickKeys² macros for QuickMail, meticulously accounting for one problem set of dialog boxes only to have the macro break again later when another problem cropped up. Had we been able to use a few IF-THEN statements, in combination with the Wait-Dialog extension, we could have made our macro check to see if additional dialog boxes were displayed and then wait for them to disappear, or we could have written a couple of lines to deal with random dialog boxes.

Future Tools

AS OUR DIFFICULTIES HAVE SHOWN, the tools don't exist yet to create a real but controlled and consistent mail network—but they are coming. Although limited, QuickKeys² extensions are a step in the right direction. The interapplication communication (IAC) capabilities of System 7 are promising, too. With IAC you can send commands to many programs and get results. For testing electronic mail, this could mean creating a script that commands an E-mail program to send a message, then asks the program to say when the message has been sent. Test scripts could be written very quickly by using scripting programs that require System 7, such as Frontier or Control Tower. Of course, using IAC scripts to instruct a package to send or read mail will require that all these E-mail programs be System 7-savvy, which hasn't happened yet. (So far, only QuickMail supports IAC capabilities.) Once they are, the IAC capabilities of System 7 should simplify testing considerably. And as better tools emerge, we'll be ready to implement them here at Macworld Lab. **m**

The Mac Zone

Established 1986

LOW PRICES

QUALITY PRODUCTS

LATEST RELEASES

OVERNIGHT SHIPPING

OVER 2,000 PRODUCTS
IN STOCK

ASSLE-FREE ORDERING

KNOWLEDGEABLE
SALES ADVISORS

OVERNIGHT SHIPPING
ONLY
\$3
DOLLARS VIA AIRBORNE EXPRESS

NEW YEAR'S SAVING SHOWCASE



\$179

LOGICODE TECHNOLOGY, INC.

Xeba 9600 Send/ Receive Fax Modem

An unbelievable value for a 9600 Send/Receive V.42 bis fax modem. This futuristic-looking modem allows multiple positions and is available in black or gray. Includes Mac cable. #03644 Reg. \$199 Less \$20 Manufacturer's Rebate Through 11/30/91

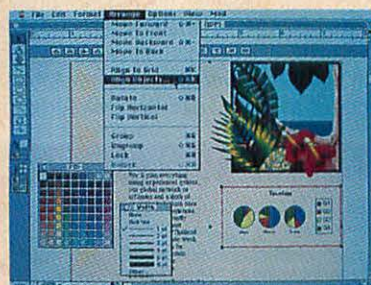
ZONE
PRICE **\$199**
MFR.
REBATE **\$20**
YOUR
PRICE **\$179**



BRØDERBUND SimAnt

SimAnt, the latest release from the makers of the award-winning SimCity and SimEarth, pits you and your fellow ants against insects and humans in your efforts to conquer the suburban back yard. #04644

\$29



CLARIS

ClarisWorks

With ClarisWorks users can easily create professional looking documents the combine colorful graphics with a variety of page layout options including multiple columns and linked text frames. ClarisWorks features interactive "environments," providing seamless integration of tools, so text, graphics, calculations and charts can be added to documents at any point. Each of ClarisWorks' environments are designed to mirror the interface of Claris' dedicated applications. #04466

\$169 While
Supplies
Last

OPEN 24 HOURS EVERYDAY • CALL 1-800-248-0800

Our Commitment:

At the Mac Zone we take great pride in providing our customers with excellent service and the widest selection of software and hardware products available. Our customers are very important to us and they deserve the best.

- ▼ **CONSISTENT LOW PRICING**
- ▼ **GUARANTEED PRODUCT AVAILABILITY**
- ▼ **KNOWLEDGEABLE SALES ADVISORS**
- ▼ **QUALITY PRODUCTS AND THE LATEST VERSIONS**
- ▼ **HASSLE-FREE ORDERING**
- ▼ **OVERNIGHT DELIVERY BY AIRBORNE EXPRESS FOR ONLY \$3**
- ▼ **30 TO 60 DAY MONEY BACK GUARANTEE ON MOST PRODUCTS**
- ▼ **OVER 2500 PRODUCTS IN STOCK**

Now! You can place your Mac Zone order through CompuServe - Just type:

Go MZ
Multiple Zones International



NOW! Our Canadian customers' orders, in most cases, delivered within 24 hours. By special arrangement with Canadian Customs all applicable duties and GST taxes will be charged when placing your order with the Zone. Your products can now be delivered hassle free through Customs without delay. Shipping charges as low as \$16 (US) via Airborne Express. Call for complete information.

POLICIES

- All major credit cards accepted. No surcharge.
- Your credit card is not charged until your order is shipped. For domestic orders, if we must ship a partial order, freight is not charged on backorder.
- Most personal and company checks received by mail will clear immediately. All checks or purchase orders must have a phone number and contact person listed in order to be processed.
- C.O.D. orders are accepted: Limit \$1,000 per order. Cashier's check or money order only. Add \$5.00 per C.O.D. order.
- Educational, government and corporate purchase orders accepted.
- All U.S. shipments insured at no extra charge.
- No sales tax, except for Washington State residents (add 8.2%).
- Prices and product availability subject to change without notice. All specials and promotions are limited to available stock. Call for current prices.
- All products covered by a 120 day limited warranty.
- Shipping is \$3 per order. We ship via Airborne Express Overnight service. (Some rural areas require an extra day for delivery.)
- Monitors are assessed at an additional shipping charge. \$25.00 for Full Page, \$50.00 for Two Page. UPS Rates are also available upon request.
- Orders place by 9 pm ET (6pm PT) weekdays for "in stock" items will ship that day for overnight delivery (barring system failure, etc.)
- APO/FPO/PO box orders are shipped first class U.S. Mail.
- Defective software will be replaced immediately, and hardware will be repaired or replaced at our discretion.
- For Customer Service call 1-800-248-9948. A Return Authorization Number is required for any product returned. Please call weekdays from 6 am to 8 pm PT, 9 am to 11 pm ET.

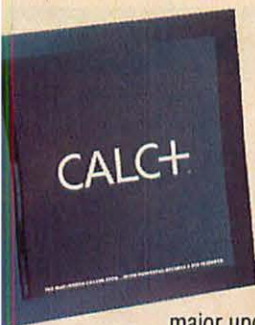
- Special Values
- Entertainment
- Education
- Integrated
- Word Processing
- Desktop Publishing
- Presentation
- Clip Art
- Fonts
- Scanners/OCR
- Monitors
- Multimedia
- CAD/3-D
- Illustration
- Painting/Drawing
- Programming
- Database
- Personal Finance
- Line Listings
- Spreadsheets
- Accounting
- Kensington
- Accessories
- Logitech
- Utilities - PIM
- Printer Utilities
- Memory Utilities
- Screen Utilities
- Virus/Diagnostic
- Hard Drive Utilities
- Modems/Fax
- Communications
- The LAN Zone
- Total Systems
- Accelerators
- Hard Drives
- P.L.I.
- NEC
- Printers
- CD ROMs
- Agfa
- Special Values

Mac Zone 18005 NE 68th Street, Suite A110, Redmond, WA 98052

International: 206-883-3088 • FAX: 206-881-3421

MAJOR CREDIT CARDS ACCEPTED

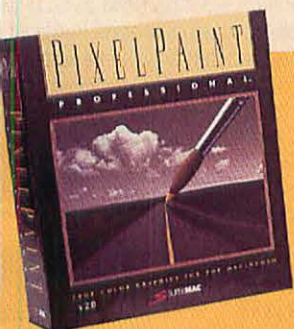
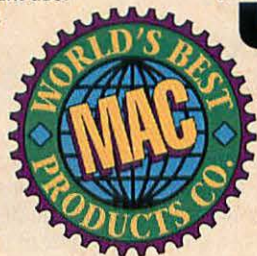
The Mac
Zone
Established 1988



**ABBOTT
SYSTEMS
CALC+**

Calc+ is a major upgrade to the standard Macintosh calculator. It's perfect for users of spreadsheet and desktop publishing software. Because Calc+ gives you all the special features, plus some very productive new ones: Desktop Publishing mode - for calculations in inches, centimeters, picas and points...plus instant conversions. Paper - print a complete hard copy audit trail. "Minimize" button - reduces Calc+ to a small icon, so you can keep it "parked" on your desktop for instant use.

\$33

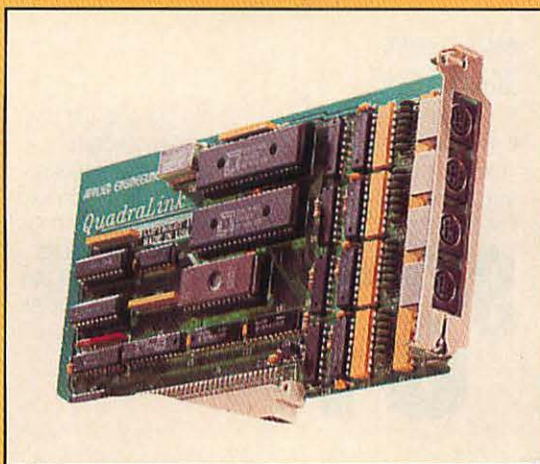


**WACOM INC.
Wacom 510 C
13x9 Tablet & Pixel
Paint Pro 2.0**

The Wacom Tablet has added a new dimension to the world of Macintosh graphics. Its cordless, pressure-sensitive stylus translates manual pressure into line width, spray density, color changes, or even "wetness" and dryout speed, depending on software. Use this feather-light stylus to paint, draw, trace, point, open, and close.

PixelPaint Professional is the first application specifically written to take advantage of Apple's new 32-bit QuickDraw software. It includes all the features of PixelPaint 2.0 like the PMS color selection, dithering and the ability to make color separations.

\$899

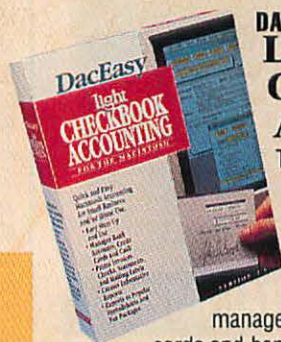


**APPLIED ENGINEERING
QuadraLink**

QuadraLink is the answer to clogged serial ports. With the proliferation of popular serial devices, printers, scanners, digitizers, plotters, modems, graphics tablets and the like, comes the need to control several serial ports simultaneously. QuadraLink is fully compatible with the Mac's Communication Toolbox and System 7.0 (when released). For software, the QuadraLink package includes software to create a "Shadow Driver" so

its serial ports will be recognized by the software. Like the Mac II's existing serial ports, QuadraLink's four serial ports are standard Mini-8 DIN connectors. QuadraLink carries a full five-year warranty. #03673

\$208

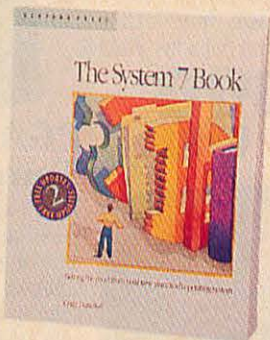


**DACEASY CO.
Light
Checkbook
Accounting**

The leader in accounting software brings you the perfect personal and small business accounting system. At home -

manage your checks, credit cards and bank accounts. At work - track customers, vendors, manage AP and AR, track cash flow and more! #04312

\$19



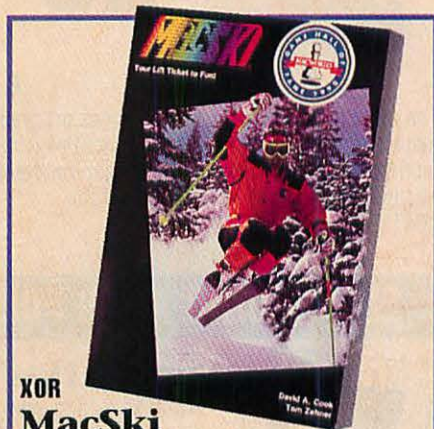
**VENTANA
PUBLISHING**

System 7 Book

It's sleek, it's sophisticated, it's System 7 - the incredible new operating system Mac fanatics have been waiting for. Craig Danuloff, noted Mac author, spent almost two years discovering the ins and outs of System 7. And you can have all his expertise at your fingertips in THE SYSTEM 7 BOOK. You'll breeze through the basics, learn to use all the new features, and uncover the tricks and shortcuts that aren't documented anywhere.

#04238

\$19



**XOR
MacSki**

MacSki brings the slopes to you. Select a course from a number of challenging runs or design your own using the Course Editor. MacSki is your lift ticket to FUN.

#03625

\$37



**FUJI
Floppy Disks**

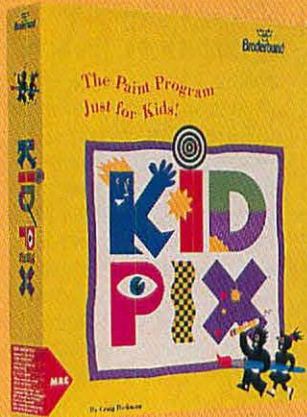
High quality, 100% error free disks with lifetime warranty in 50 disk bulk packs. Up to \$2 per box manufacturer rebate - see box for details.

**DS/DD
\$14**

#02657

**DS/HD
\$19**

#02658



BRØDERBUND

Kid Pix

Kid Pix is an amazing paint program created just for kids. It combines special effect art tools, picture stamps, sounds and magic screen, transformations turn the computer into a magical art studio. With Kid Pix, you don't just paint a masterpiece, you hear it too!

\$31

Every brush and tool has its unique sound effect. You can even record greetings, poems, or music to enhance your creations. #03994



INTERPLAY

Battle Chess

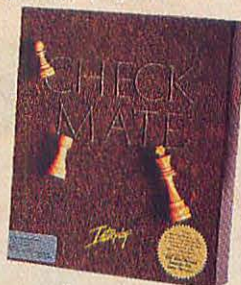
The chessboard comes to life with Battle Chess, the first animated chess game. Watch pieces move and battle over the squares in full VGA graphics with digitized sound effects. Ten levels of difficulty, play versus the computer, face to face, or watch the computer play against itself. #04134

\$29

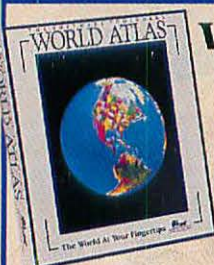
INTERPLAY
Checkmate

The most powerful and versatile chess program on the market, with state-of-the-art graphics, a highly intuitive user interface, and the widest range of features found on any micro-computer chess program. #04135

\$34



ELECTRONIC ARTS FOR YOUR ENTERTAINMENT



World Atlas

World atlas, almanac and world fact book, with instant access to over 240 EGA/VGA color maps and database of information. #03589

\$49

Starflight II

The Spemin, once the "whipping blobs" of the cosmos, have become the galaxy's most feared race. Your mission is to find out why. #04346

\$39

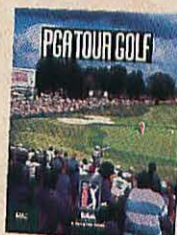


SimEarth: The Official Strategy Guide

The special scenarios developed for this book will enhance the SimEarth owner's enjoyment and

\$18

understanding of this popular and topical game. #04303



PGA Tour Golf

Tee off against 60 top PGA Tour pros in real tournaments on actual courses. Stunning color or B&W graphics with TV-style coverage. Fast and accurate ball play. #00473

\$38

AD & D: Secrets of the Silver Blades

The frigid valleys of the Dragonspine mountains echo with the desperate plea of terrified miners. Unwittingly digging in unhallowed ground, they have disturbed an ancient vault and released its terrible content. Scores of horrific creatures now infest the mine shaft — and threaten to escape into the world above! #04304

\$39



GAMES BY TOYOGO



Go Master

Go combines Japanese philosophy and business strategy into this national game. #04495

#04493 Go Junior \$20

\$41

Deluxe Toolkit

NEMESIS Deluxe Toolkit enhances Go study with our two improved tutorials: NEMESIS Joseki Genius™ - a corner openings tutor, and NEMESIS Tactical Wizard™ - a tactical life and death analyzer as well as our newest addition NEMESIS Scribbler™ - a powerful game recording and annotation system. Used as a stand alone product, it also supports human-human play, modem play, and board editing. Installed into Go Master you have the most complete Go playing & tutorial system in the world. #04494

\$84

CENTRON SOFTWARE

Casino Master

Feel the suspense-filled action of casino gambling with Casino Master. Learn and practice at your own pace without risk. Includes Craps, Roulette, Blackjack Ace, Poker, and Baccarat with complete manuals including rules and betting strategies. Not copy protected. #02471 B&W #02470 Color \$44

Puzzle Master

Now you can use your Mac to solve crossword puzzles, or create your own puzzles for fun or profit. #04554

\$26



The Mac
Zone
Established 1980

INTERPRETATION SOFTWARE

Cyberblast

More to shoot, dodge, and grab than any arcade Hit on the Mac! Excellent sound effects as you wind your way through 60 action-packed levels - the clock is ticking and each level is more difficult to solve than the last. #04189



\$24



POSTCRAFT INTERNATIONAL

Citadel with Secrets

Your quest is to free the Lady Synd imprisoned by the Wizard. You'll experience knockout sound and graphics as you create your own tales, encounter might and magic, and engage in realistic combat. Enjoy Citadel with Secrets - more than just a book - a fascinating journey of one explorer's wanderings through depths of the Citadel. #03129

\$28



SOFTWARE TOOLWORKS

The Hunt for Red October

The Kranzy Oktyobr has defected. As Captain First Rank Marko Ramius, you must deftly navigate the Red October, a fearful Soviet Typhoon class ballistic missile submarine in the fjords of the North Sea to a safe harbor in the United States. #02288

\$20



XOR CORPORATION

TaskMaker

The world has plunged into depression and devastation...the once mighty Kingdom is no longer. You must restore order and prosperity to the Kingdom, but you have no experience. To get help, find the TaskMaker, and with his guidance and your courage, the Kingdom might be saved! #02909

\$26

FTL

Oids

Rescue the OIDS from the fiendish Biocretes who are turning them into vending machines and household appliances! Create your own games with the OIDS Construction set.

Design your own planetoids and puzzles in minutes with simple cut-and-paste operations. Make new games for yourself or trade with friends. #00240



\$29



BRØDERBUND SOFTWARE

RoboSport

RoboSport combines the tactical challenge of chess with the intensity of guerilla warfare to provide total strategic

mayhem. Armed with bombs, bullets, missiles, grenades and more, you control teams of Robots that compete in 5 different sports: Survival, Treasure Hunt, Capture the Flag, Hostage and Baseball. Plan your tactics, instruct your troops and kick Robutt! #00145

\$34

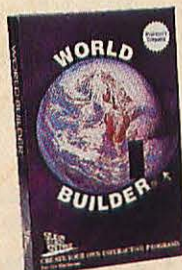
QUALITY GAMES FROM SILICON BEACH

SILICON BEACH SOFTWARE

Beyond Dark Castle

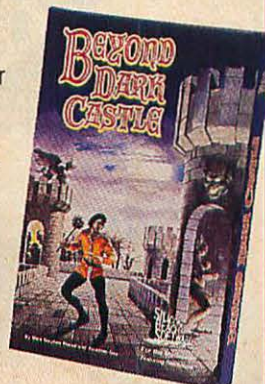
Beyond Dark Castle is an exciting arcade-style game designed for those who like their action fast and furious. The game features stunning graphics, full-screen scrolling in the Castle's complex mazes, a flying jetpack used to get over the swamps and forests, and Silicon Beach's unique RealSound™ effects, creating an eerie feeling of realism throughout the game. #01376

#00689 Dark Castle \$35



World Builder™

Have you ever felt the urge to create your own adventure game? Do you need to produce training materials that are scene oriented? And yet you're not a programmer. Here is the solution! World Builder gives you all the tools you need to make your own professional-quality, stand-alone games, training programs, etc. #04600



\$32

\$54



SOFTSTREAM

The Classic Trilogy - Gift Edition

Improve your skills or teach others these traditional card games: Cribbage, Whist, and Hearts. Includes everything you need to play with friends, including a card deck, a cribbage board, and an informative history. #04601

The Family Card Games

Three more card games from the makers of The Solitaire DA. This new product contains War, Solo and Canfield. #04602

\$59

\$49



SPECTRUM HOLOBYTE

Falcon v2.2

When you climb into the cockpit of the F-16 Fighting Falcon, get set for the "flight of your life" as the powerful FALCON takes you streaking across the sky at Mach 2. Pit your skills against those of your friends. Find out who is the real "top gun"! #01808

\$34

Vette!

Vette! puts you behind the wheel of America's premier production sports car in the streets of San Francisco! Pit your racing skills against top European sports cars. Comes equipped with all those driving nuisances (like pedestrians, trucks, police, taxis and traffic jams!) #03808



\$32

OPEN 24 HOURS • CALL: 1-800-248-0800

ACCOLADE

Grand Prix Circuit

The ultimate fusion of car and driver. Experience the power. The Passion. The Performance. Grand Prix Circuit whisks you to the exclusive world of Formula One racing. Slither and slide through the curves of glamorous Monaco. Blast down the straightaways of Germany. You'll compete against international rivals for the title of World Driving Champion. #02757



\$34



KRAFT SYSTEMS KM30 Joystick

Whether handheld or positioned on your desktop, the KM 30 makes computer input and productivity better than ever. Macintosh ADB compatible, a precision analog joystick to meet all your needs. Great for graphics, business, education, and entertainment software. #01990

\$44



BUNGIE SOFTWARE

Operation: Desert Storm 1.5

Join the Forces in the Gulf in this realistic full color battle simulation! Experience full screen action on any monitor as you command your M1A1 Abrams tank on a series of missions against a hostile, well-equipped enemy. #04106



\$27



MICROSOFT

Flight Simulator V 4.0

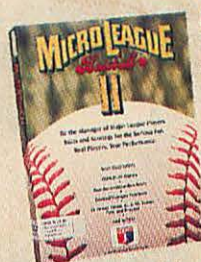
The new Flight Simulator boasts state-of-the-art, three-dimensional graphics on both color and black-and-white Macintosh computers. Users can choose from a fleet of aircraft, including Cessna 182, Lear Jet, Sopwith Camel and Schweizer

2-32 sailplane. Or, they can design and fly their own planes with the exclusive experimen-

tal aircraft designer. Users can tinker with both the appearance and aerodynamics of the aircraft and test them against the physical laws of flight. The Flight Simulator world encompasses 100 million square miles, spanning most of North America. Desktop pilots can take off from or land at 125 different airports and explore detailed scenery and landmarks in Los Angeles, San Francisco, Seattle, Chicago, and the Boston-New York corridor. #04293



\$39



MICROLEAGUE Baseball II

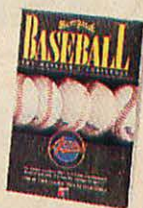
Baseball II features real-life players and accurate stats. You coach actual major leaguers by setting up lineups, picking your spots for pinch

hitters and relievers, deciding when the players will steal, bunt or do a pitchout - in short, make every managerial maneuver in every game. #02923

\$37

The Manager's Challenge

It's the bottom of the ninth, one out, and your pitcher has the tying run on second, the winning run at the plate. The opposing team has put in their best right-handed pinch hitter and he looks confident. Your managerial skills are the key to winning this game. #04259



\$28

THREE SIXTY SOFTWARE

Armor Alley

Armor Alley is hot, and it gets hotter with every battle. Through the rattle of machine guns and a searing flood of napalm, your job is to lead convoys of equipment and men through the enemy's lines and destroy his base. To succeed, you must keep your wits about you despite the constant explosions and gunfire. #03597



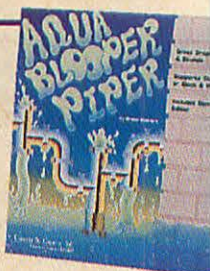
\$33

CASADY & GREENE

Aqua Blooper Piper

You must either select pipe pieces from a conveyor belt and fit them together properly, with no errors (bloopers), to connect two open pipes on the opposite ends of a basement - or have the same basement fill with water (aqua). The game's editor allows you to choose favorite sounds and graphics. #04581

\$29



CASADY & GREENE

Glider 4.0

The game's theme revolves around an eerie mansion and a paper airplane. A player tries to fly a glider from room to room and get past numerous and varied obstacles, including toasters, paper shredders, electric wall sockets, and fish jumping out of their bowls. The idea is to fly through all 60 different rooms and the out of the house. If you master the game, the Room Editor allows you to create your own version of obstacle-filled rooms. #04580

\$29



The Mac Zone
Established 1986

BADY & GREENE Game Fun Bundle™

Crystal Quest with
StarEditor received a
1999 Eddy Award from
MacUser and a 5 Mice
Award from MacUser.
StarShadow was entered
in MACWORLD's 1990
Hall of Fame for



\$59 Best Arcade Game. Mission
Starlight received a 4 mice
rating from MacUser.
#04582



ADVANCED GRAVIS MouseStick

For entertainment it's the high-scoring MouseStick. Its advanced optical technology and dedicated processing unit are ideal for flight simulators or mouse-intensive entertainment software. Includes custom settings for popular games — or you can create your own.
#02740

\$58

#02741 Joystick \$58



DELTA TAO Strategic Conquest 3.0

One of the best
military strategy
games for any personal computer.
You control the production and movement
of your armed forces in a struggle against
an enemy bent on world domination. The
state of the world
depends on your
strategic and
tactical decisions.
#04083

\$37



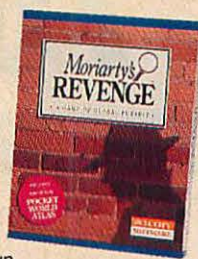
DELTA TAO Spaceward Ho!

Spaceward Ho! is a
strategic game of
awesome scope.
You control the entire
military and economy of a spacefaring race.
Your goal: Explore and colonize the galaxy.
Unfortunately, you are not alone. Alien
enemies bent on galactic conquest oppose
your expansion. You maneuver your
spaceship fleets, both in
defense of your own
systems and in offensive
strikes. #04116

\$37

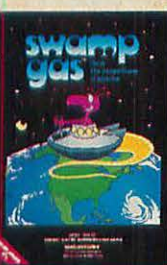
MYSTERIUM TREMENDUM Moriarty's Revenge

The infamous
Dr. Moriarty is now
leader of a world-wide
crime organization and
you must track him down.
You'll travel the world, taking notes, puzzling
over clues and trying to stay alive. Over
1,000 clues and a computerized
notebook to keep them in.
With varying levels of difficulty,
it's never the same game twice.
#03290



\$31

GREAT GAMES FROM INLINE DESIGN



Swamp Gas

Swamp Gas is an
animated color game
that teaches United
States geography. An
extraterrestrial lands
in America and must visit
a number of states,
cities, and landmarks. After he completes
his mission, the player may visit the Alien
Arcade and play one of
three uniquely humorous
and quirky arcade-style
games. #04251

\$32



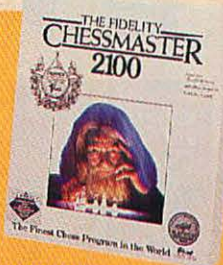
Mutant Beach

Mutant Beach is a
fully-animated, full-
color interactive action
adventure game,
starring Native Nick, a
laid-back islander.
Nick must overcome
amusingly mutated creatures, along with
traps, false paths, and locked gates, to
return the stolen nose to
his island's idol. Detailed
flicker-free 8-bit animation.
#04252

\$44

SOFTWARE TOOLWORKS Chess Master 2100

"The 2100" offers
stronger and more
varied play with an
unlimited number of levels (from
an "easier" easy to a "tougher" tough),
triple the number of features, more and
different classic games
and even greater in-depth
analysis.
#02651



\$32



Tesserae

Tesserae is a color
puzzle game in which
the player eliminates
tiles from a "board"
according to color and
texture. When only
one tile remains on the
board, a different,
more difficult
arrangement appears.
#03934

\$31



3 in Three

3 in Three is an
animated color puzzle
game. A number 3 has
become lost inside the
CPU of a computer, and
she wants to find her
way back to her
spreadsheet. To help
her on her way, the
player must solve a
score of original brain-
teasing puzzles.
#03599

\$32



XOR MacGolf Classic

MacGolf Classic offers
vivid full-screen color
graphics with
unmatched screen
image detail. Five
enlargement
options for close-up viewing. Nine
practice greens and a driving range. Control
your stance, ball
placement, shot
direction, swing,
choice of 14 clubs.
#01984

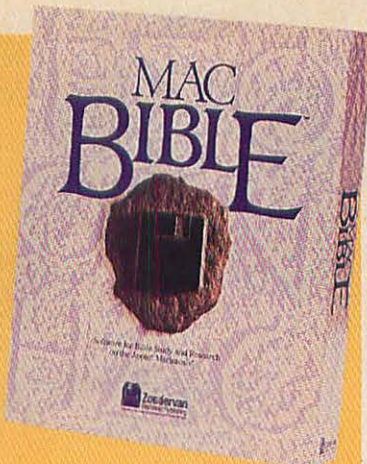
\$49

OPEN 24 HOURS • CALL: 1-800-248-0800

ZONDERVAN MacBible New International Version

Zondervan MacBible presents several different versions of the Bible to help you understand its meaning more clearly. It quickly finds the passage you want.
#00016

\$78



#00017 King James\$78 #00021 Greek\$109
#00018 RSV\$78 #00023 Hebrew\$109

BRØDERBUND Where In Time Is Carmen Sandiego?

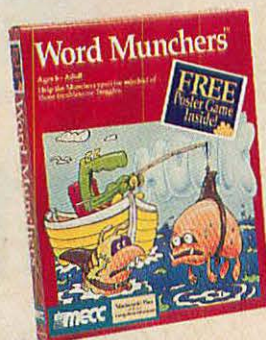
Chase Carmen and her gang through 1500 years of world

\$28



history picking up clues on historical events, scientific inventions and famous people.
#03513

MECC "MUNCHERS" MAKE LEARNING FUN!



MECC Word Munchers

Learn vowel sounds the fun and easy way - with Word Munchers! Chase your Muncher around the gameboard, gobbling up words with the same vowel sounds.
#00073

YOUR CHOICE

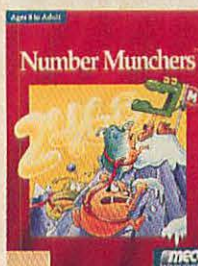
\$28



MECC Super Munchers

Learn fascinating facts in a variety of subjects - animals, famous Americans, food and health, geography, music, odds 'n' ends, and

sports - in this challenging, fast-paced game! #00500



MECC Number Munchers

Munch your way to math mastery! With the Muncher's help, you'll learn basic math skills the fun and exciting way. It mixes amusing

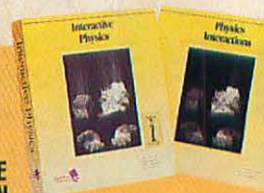
graphics and sounds with practical math skills. #00072

KNOWLEDGE REVOLUTION

Interactive Physics 1.2.2

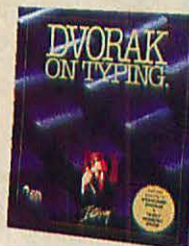
The easy to use, yet surprisingly powerful physics laboratory on a computer. Measurement devices include numerical readout, analog display and graphing capabilities for 16 different physical properties.
#00260

\$188



INTERPLAY Dvorak On Typing

Dvorak on Typing is the first major typing program to feature a human voice that sounds out the letters as you type, helping you to become confident with touch typing.
#04256



\$31

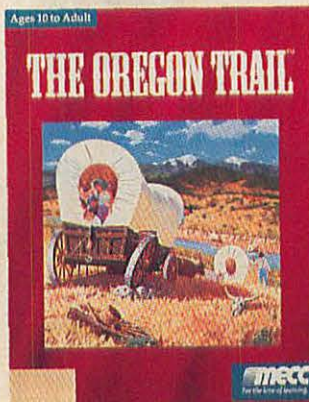
EARTHQUEST, INC.

Ecology

Explore the major ecosystems on Earth. Learn about the vital relationships and cycles that sustain all life. Enjoy many engaging and educational games as you journey through ecology. #04578



\$41



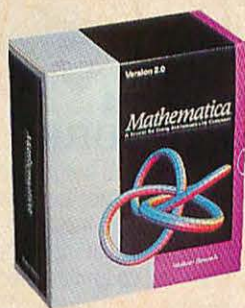
MECC

The Oregon Trail

Players load up their gear and hit the trail with other pioneers in this realistic award-winning learning simulation. While they experience the life of the American frontier along the 2,000 mile route, players talk with colorful characters, navigate rushing rivers, and meet friendly Native Americans. And their families depend on them to make crucial decisions at every turn.
#00074

\$28

The Mac
Zone
Established 1980



LEARN
SEARCH

Mathematica Enhanced V2.0

Numbers are your business. Mathematica does numerical, symbolic and graphical computation. It can be used as an interactive calculation tool and programming language. Numerical capabilities include arbitrary precision, arithmetic and matrix manipulation. Mathematica 2.0 can manipulate formulas directly in algebraic form, perform such operations as symbolic equation solving, integration, differentiation and power series expansion.

Includes two- and three-dimensional PostScript graphics.

\$789

HYPERGLOT Survival Manual

An electronic phrase book. Program is divided into topic of interest to travellers: Greetings, Hotels, Food, Clothing, Communications, Transportation, Health, etc. Each topic contains about 25 recorded phrases.

User clicks on phrase, hears native speaker pronounce it, and sees a translation. Extensive notes available about the topic being studied. Many other phrases besides the recorded ones available for each topic. A Phrase Finder allows user to find the phrase he/she wants to hear. **STANDOUT FEATURES:** If user has MacRecorder, he/she can record your own voice right into stack and then compare his/her pronunciation of the phrase with that of the native speaker. Sounds thus recorded can be renamed and erased.

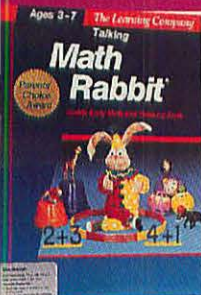
#04234 French #04235 Spanish #04236 German



YOUR CHOICE

\$39

GREAT GIFTS FOR KIDS!

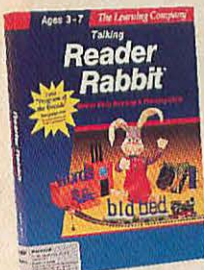


Math Rabbit

Here's another delightful way to teach early-learning skills. Math Rabbit's animated graphics and lively music

encourage young children (ages 4 to 7) to explore the world of numbers. In four exciting games, children can learn counting, number, and pattern recognition, addition, and subtraction.

\$35

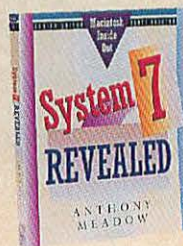


Talking Reader Rabbit 3.0

Reader Rabbit builds early reading skills for kids from age four to seven. It uses lively graphics, plus delightful sound effects, music and speech to capture

kids' interests. Reader Rabbits has four carefully-sequenced games to teach children how to recognize, remember, and spell over 200 three-letter words. #01856

\$35

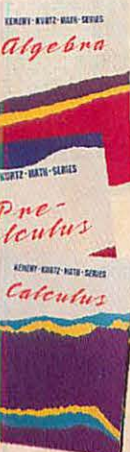


ADDISON-WESLEY System 7.0 Revealed

Written by Macintosh authority, Anthony Meadow, System 7.0 Revealed offers programmers a first look at System 7's many

new features and shows how to take full advantage of these features in developing Macintosh software. Other books in the acclaimed Macintosh Inside Out Series and the Apple Technical Library, including Inside Macintosh Volume VI, can be found in the index. #00250

\$18



TRUE BASIC Algebra, Pre-Calculus & Calculus

When pencil and paper aren't enough, reach for the Kemeny/Kurtz Math Series. These best-selling math packages help you organize your thoughts, understand key concepts, step through examples, and solve real problems.

\$39

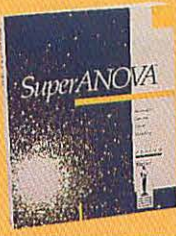
527 Algebra
529 Pre-Calculus
530 Calculus

YOUR
CHOICE

ABACUS StatView II

StatView II is a comprehensive statistical analysis and presentation graphing program for the Macintosh. StatView II places analyses in a fully interactive presentation-quality graphing environment where results may be easily customized using drawing and text tools. StatView II will output to any Macintosh-compatible black-and-white or color printer, plotter, or slidemaker. #00032

\$278



SuperANOVA

SuperANOVA is a complete general linear modeling program for the Macintosh. SuperANOVA analyzes virtually any model, including ANOVA, ANCOVA, MANOVA, MANCOVA, repeated measures, and more. With SuperANOVA you can create, modify and save model designs, as well as annotate them in a complete, interactive drawing environment.

\$308



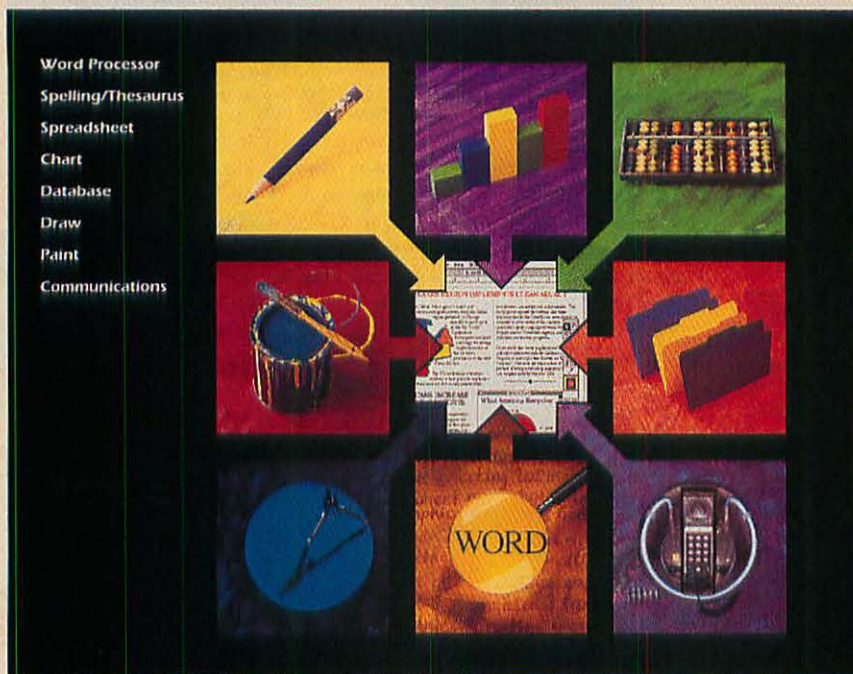
OPEN 24 HOURS • CALL: 1-800-248-0800



For the Macintosh

BeagleWorks™

The true meaning of integration.



Word Processor
Spelling/Thesaurus
Spreadsheet
Chart
Database
Draw
Paint
Communications

U N L E A S H T H E P O W E R

WORD PROCESSOR

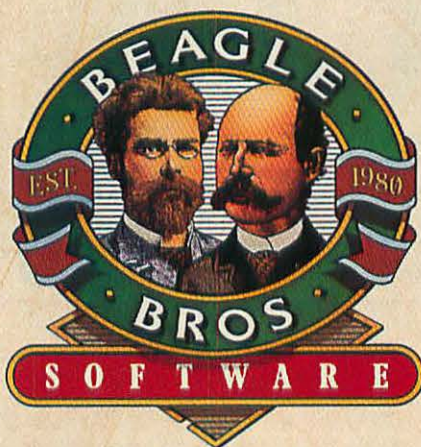
- ▲ Automatically wrap text around objects
- ▲ Format in multiple columns
- ▲ Graphic ruler with tool bar for quick formatting
- ▲ Multiple headers and footers, custom styles and more
- ▲ Micolytics® spelling checker and thesaurus

SPREADSHEET

- ▲ Apply a different type style to any cell
- ▲ Create up to 256 columns and 16,385 rows
- ▲ Tool bar allows easy access to formatting, alignment, borders, shading and charting
- ▲ Incorporates powerful and time-saving natural order minimum recalc

CHART

- ▲ Chart types include Line, Bar, Column, Area, Scatter, Exploded Pie and more
- ▲ 256 custom colors



DATABASE

- ▲ Manage databases with more than 16,000 records per file and 256 fields pre record
- ▲ Mail merge with word processor
- ▲ 64 built-in functions
- ▲ Up to 32 report formats for your data
- ▲ Tool bar provides easy access to formatting and alignment, borders, shading, sorting, and summation

BEAGLE BROTHERS

BeagleWORKS

This new, integrated program offers a full-working word processor with spelling checker and thesaurus, spreadsheet with charting, database, paint, draw and communications modules all in one package. Its true integration, lets you combine data from all other modules into a single document and make changes (edit in context) without leaving that document.

#04327

\$184

BeagleWORKS Competitive Upgrade

\$99 Upgrade - if you have AppleWorks 3.0, AppleWorks GS, Microsoft Works, Desk, Ragtime, GreatWorks, or ClarisWorks. Send in a copy of the front cover of your manual with the Beagle Brothers registration card in order to become a registered owner and be eligible for updates and tech support. Nothing needs to be sent to Mac Zone. #04555

\$99

DRAW

- ▲ Tear-off menus for tools, colors, patterns and line widths
- ▲ Drawing tools include line, arc, rectangles, freehand, polygon, oval and more
- ▲ 256 custom colors and 128 patterns

PAINT

- ▲ Paint tools include paintbrush, spraycan, paint bucket, pencil, line, arc, freehand shape and more
- ▲ Tear-off menus for tools, colors, patterns and line widths
- ▲ Special effects
- ▲ Paint color images using 256 custom colors and 128 patterns

COMMUNICATIONS

- ▲ Stores commonly used phone numbers with settings
- ▲ Auto dial and auto answer
- ▲ Uses Apple's Communications tool box



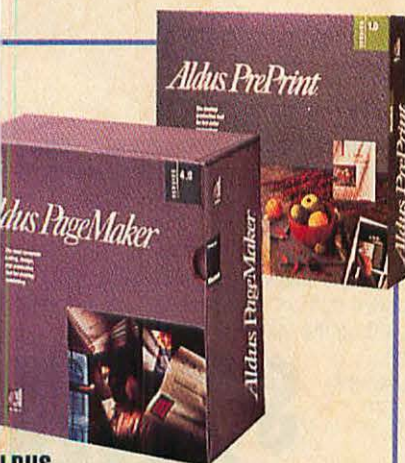
T/MAKER

SmartBundle

total solution for first-time Macintosh users. A collection of four easy-to-use applications in one bundle at an incredible price - the best value in Macintosh software today! Each application has won MacUser Magazine Eddy Award recognizing it as the 'best' in its field, so you know each part of the SmartBundle is extraordinarily capable. The SmartBundle contains WriteNow 2.2, T/Maker's award-winning word processor. Full Impact 2.05, for spreadsheets and charts. Recorder Plus for database management and SuperPaint 2.0, for painting and drawing.

\$149

#00042



ALDUS

PageMaker & PrePrint Bundle

The PageMaker 4.2 package will include PrePrint 1.5, a color-production tool that enables users to enhance and color-correct TIFF images, as well as generate color separations of multipage documents, including text, illustrations, and color photographs. PrePrint can separate and print PageMaker files and any Postscript file that conforms to Adobe Systems' color-separation and document-structuring conventions. It also creates, recognizes, and prints DCS (Desktop Color Separations) files.

#04573

\$498



RAGTIME

RagTime 3.1

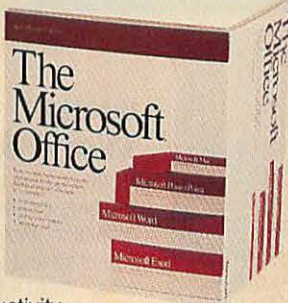
RagTime is the ideal tool for all private or office documents on Apple® Macintosh™ computers. RagTime represents a completely new way to work in an integrated environment that offers all the tools that you need for your daily work:

Do you need a Desktop Publishing program? Here's a little secret: Even though RagTime is not a dedicated DTP program, it does most DTP tasks with such elegance and ease that it quickly became a DTP standard in Europe after its introduction.

#04055



\$369

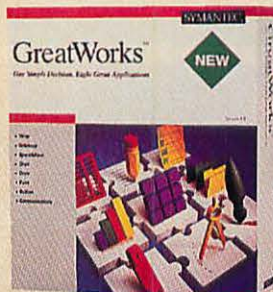


MICROSOFT Office V1.5

Four essential business-productivity applications in one special edition. Each is an industry standard in its category: word processing, spreadsheet, desktop presentations, and electronic mail. Use Microsoft Word to write memos and reports; Microsoft Excel to crunch numbers and create annual-report-quality graphics; Microsoft PowerPoint program to create impressive presentations; and Microsoft Mail to instantly share information.

#02678

\$519



SYMANTEC

GreatWorks Upgrade

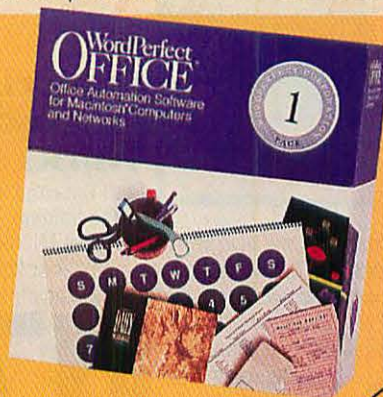
Any owner of MS Works or AppleWorks can now step up to New GreatWorks' eight feature-rich applications in a single, easy-to-use integrated program. Get full word processing database, spreadsheet, charting, drawing, painting, outlining and communications modules. Includes a 100,000 word spell checker and 660,000 word thesaurus. It runs in less than 1 MB of RAM, perfect for Macintosh classic on up. #04040

\$99

WORDPERFECT

WordPerfect Office

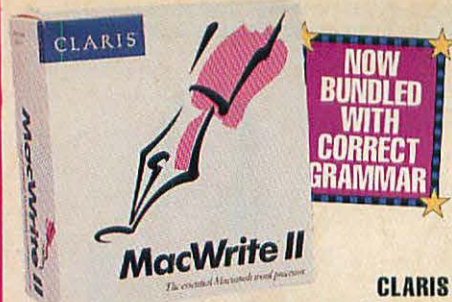
WordPerfect Office™ for the Macintosh® is a collection of office automation programs for Macintosh networks. The programs in Office include Mail, Calendar, Notebook, File Manager, and Forms Maker. The desk accessories allow you to send electronic mail, schedule events and resources for people on the network, create databases, and organize your desktop. The Forms Maker application lets you create forms for use in Mail, Calendar, and Notebook. In addition, Office includes gateway services to communicate with other WordPerfect Office platforms and third-party electronic mail systems. #04170



\$92

INTEGRATED

OPEN 24 HOURS • CALL: 1-800-248-0800



CLARIS MacWrite II

Create a variety of documents. MacWrite II® software gives you all the tools you need for a wide range of writing tasks, from simple memos and reports to sophisticated business proposals, multi-column newsletters, and 1,000 page manuscripts. Check your spelling with the built-in 100,000-word dictionary. Or find just the right word with the 220,000-word desk-accessory thesaurus. Read, edit or insert files created in other word processors like MS Word or WriteNow. #04703

\$138

WORDPERFECT WordPerfect 2.02

If you've been waiting for a word processor for your Mac that combines power and elegance, the wait is over. We've designed a brand new interface with an eye toward simplicity. Compact, easy-to-understand menus and streamlined dialog boxes give you access to all the WordPerfect features you're used to and many exciting new additions.

#03972

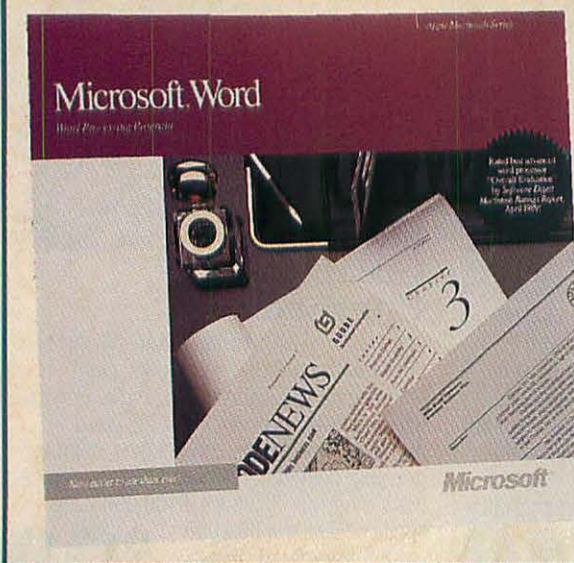
\$278

PARAGON Nisus

The breakthrough is here. There is no other word processor on the market as powerful, fast or easy to use as NISUS. Which one, the click of the mouse: Lets you draw a picture right over the text? Makes it transparent or opaque? Lets text flow through or instantly wrap around it? Allow you to undo more than 32,000 text or graphic actions? None but NISUS. #03479

\$244

OVER A MILLION SOLD!

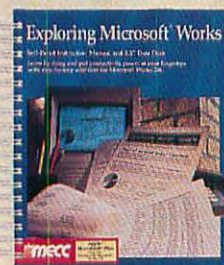


MICROSOFT Word 4.0

Design pages with different number of columns on the same page. Place sidebars exactly where you want them. Automatically wrap text around graphics. Tables are a breeze. Just enter the number of rows and columns you need and Word generates your table with automatic text wrap within cells. Word 4.0 even has facilities for creating mathematical formulas. It has a spelling checker, hyphenation, style sheets, a glossary, automatic indexing, mailmerge and an integrated outliner. Coupled with a connectivity program such as MacLink, Word 4.0 on the Mac is compatible with the MS-DOS version of Word and with PageMaker (both Mac and PC versions) so you can exchange files among all these formats.

#02238

\$244



MECC Exploring Microsoft® Works

Staff Development-
These training

materials will help you learn to use Microsoft Works 2.0, one of the most popular software packages ever published for the Macintosh.

Easy-to-follow
activities and sample
document files
on disk.
#00075

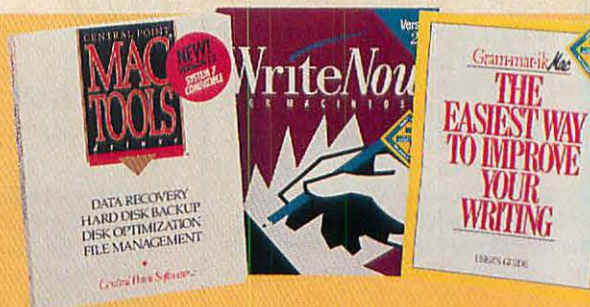
\$17

T/MAKER Holiday Bundle: WriteNow 2.2, Grammatik Mac, & Mac Tools

Never has so much
value been delivered at
such a low price.

WriteNow, two-time winner of the prestigious MacUser Eddy award for word processing, now comes with Grammatik Mac 2.0, the best selling Grammar/style checker (a \$99 value) and MacTools Deluxe, the data protection and file management utility, (a \$129 value) FREE WriteNow, containing a 1.4 million word thesaurus and 135,000 word dictionary is still the fastest and easiest word processor for the Mac.

#04465



\$99

**The Mac
Zone**
Established 1980

INTERNATIONAL ORDERS ACCEPTED

INTELLIGENCE
SOFTWAREReport
Ideas DA

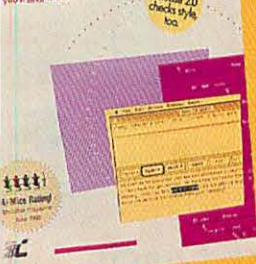
Report Ideas gives you the power to create massive, hard hitting reports. Yet it's as intuitive as the Mac itself. Selecting a topic in the Ideas menu brings down the available phrase window. Each phrase listed in the window is made up of several word chips. Each word group has its own pop-up menu of alternatives. In this way, the user can quickly skim through the different permutations of the phrase and choose the most appropriate. #04176

\$78

Correct Grammar

For the Macintosh

If you find your spelling checks, you'll love this sentence checker.



WRITING TOOLS GROUP

Correct Grammar

Correct Grammar is an easy way to avoid embarrassing mistakes in letters, reports and proposals. It makes your writing clearer and more precise. It identifies inconsistencies in grammar, style, punctuation, usage and spelling (with its own 135,000-word dictionary), and then suggests how you might correct any errors. #03813

\$49

#04607 American Heritage \$89

PROGLYPH

Editorial Advisor

It's not a grammar checker. Editorial Advisor is a computerized style manual that covers grammar, punctuation, style, usage and more. Learn the conventions of editing, and give your writing that professional edge.

With System 7.0 you can install Editorial Advisor on your DA menu. It's like having a reference library on your hard disk. #03944

74

PERSONAL BIBLIOGRAPHIC SOFTWARE



Pro-Cite 2.0

A powerful database program that saves you hours of time by enabling you to manage and format bibliographic and text information automatically. New features include instant searching, expanded word processing support, and increased record capacity. #01892

\$195

Biblio-Links

Companion programs to Pro-Cite, each program transfers records down-loaded from online services, CD-ROM and disk-based data products directly into Pro-Cite. #04310

\$98

Pro-Search

A specialized front-end software program that simplifies searching of DIALOG databases. Pro-Search's unique, menu-driven interface helps you select the most useful database to search by providing bluesheet data on disk. Save time and money by constructing and storing search strategies offline. A built-in accounting feature tracks online charges automatically. #04266

#04266

\$149

LAST RESORT™

Typing Retrieval System for people who can't afford to lose important text. For use with Apple II, Macintosh, and compatibles.



Working Software, Inc.

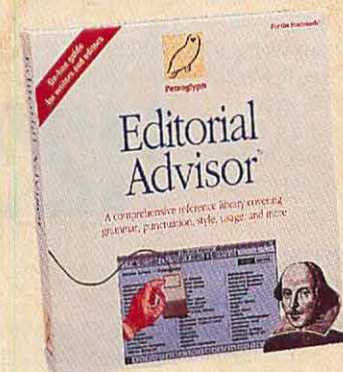
WORKING SOFTWARE

Last Resort

Last Resort is an all new utility to help you retrieve typing lost by system crashes, failures to save, deletions or other unfortunate circumstances. Last Resort saves every keystroke to a file on your hard disk without slowing your typing. Lost text can be retrieved using any word processor. #04061

#04061

\$28



PROGLYPH

Editorial Advisor

It's not a grammar checker. Editorial Advisor is a computerized style manual that covers grammar, punctuation, style, usage and more. Learn the conventions of editing, and give your writing that professional edge.

With System 7.0 you can install Editorial Advisor on your DA menu. It's like having a reference library on your hard disk. #03944

74

REFERENCE

Grammatik Mac 2.0

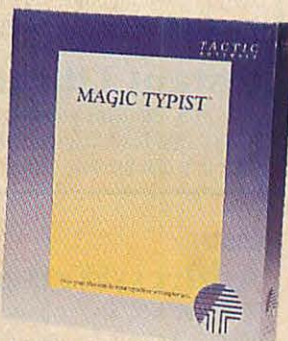
Grammatik Mac improves the quality and clarity of your writing. It checks for common grammatical and stylistic errors, clichés and jargon, commonly misused words, and long-winded sentences. It also looks for incorrect capitalization, subject/verb disagreement, double negatives, excessive use of passive voice, split infinitives and many other typical writing problems. #03143

\$57

TACTIC
Magic Typist

Magic Typist™ is a utility which works with any application to relieve you of the chore of typing long words, phrases, and paragraphs over and over again. Type it only once and you'll never have to type the whole word or phrase again.

Thanks to Magic Typist. #03405



\$49

OPEN 24 HOURS • CALL: 1-800-248-0800



QUE RightWriter

RightWriter makes your writing clearer, more concise, and powerful. RightWriter proofreads documents for thousands of errors in grammar, style, word usage, and punctuation. RightWriter works with major Macintosh word processors and all standard text files. RightWriter uses more than 4,500 rules to proofread documents, inserting comments and suggestions where errors occur and analyzing documents for strength, readability, and jargon. #04597

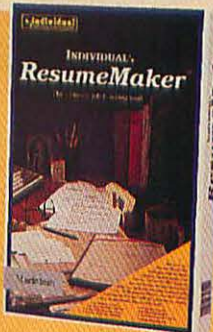
\$53



INDIVIDUAL ResumeMaker

Individual's ResumeMaker helps you quickly get on the right track for the job you want. It's easy to use; simply fill in on-screen information forms with your experience, education and skills. It then automatically transforms this into a winning, professional-looking resume. Includes varied resume formats, Guided Letters, a full word processor, target company database and much more. #00432

\$29



FRANKLIN ELECTRONICS Language Master

Language Master combines an electronic dictionary of definitions with an electronic thesaurus, giving you access to words, definitions and synonyms which will help effectiveness of your communications. If your query word is misspelled, Language Master will suggest a list of alternative words. With the help of the computer, a single unified reference work is possible and is available in Language Master. #00010

\$44

WRITING TOOLS FROM NOVA DEVELOPMENT



American English Writing Guide

It's the complete reference to style, punctuation, and better writing for the Macintosh. You'll find rules and examples for a variety of writing topics, from capitalization to punctuation, spelling to bibliographies. #04263

\$38

American Handbook of Business Letters

Save time and money with nearly 300 instant letters for every business occasion from congratulating a business associate to collecting on past-due accounts. Just add a date, name, address, and you're ready to print! #04261

Instant Library of Quotations

This program gives you fast access to more than 5,000 contemporary, literary, and historical quotations, right from your Macintosh keyboard. Each one can provide a solid foundation for making any point. #04262

YOUR CHOICE

\$32

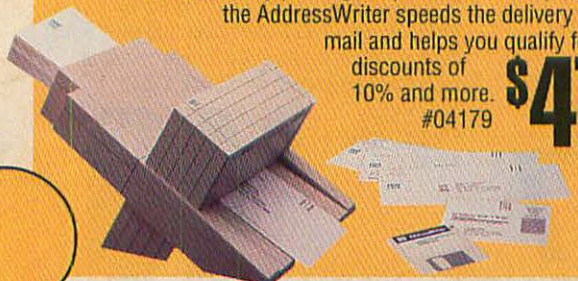
COSTAR

AddressWriter™

Finally, an easy way to print envelopes and postcards! The AddressWriter is the first printer designed specifically to print envelopes and postcards, either one at a time, or by the hundreds.

In addition, by printing the postal bar code (POSTNET), the AddressWriter speeds the delivery of your mail and helps you qualify for postal discounts of 10% and more. #04179

\$479



BASELINE PUBLISHING Thunder 7

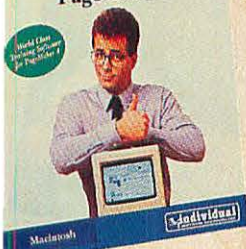
Thunder 7™ is total word mastery for you Mac, providing both true interactive spell checking as well as a completely integrated thesaurus. Using the glossary feature, misspelled words, personal abbreviations and terms automatically correct themselves as you type. Using Thunder 7's utility program, your existing users' dictionary can be quickly included into the program library of words. #03941

\$56

The Mac
Zone
Established 1980

OVER 2,500 MAC PRODUCTS IN STOCK!

INDIVIDUAL TRAINING™

FOR
PageMaker®

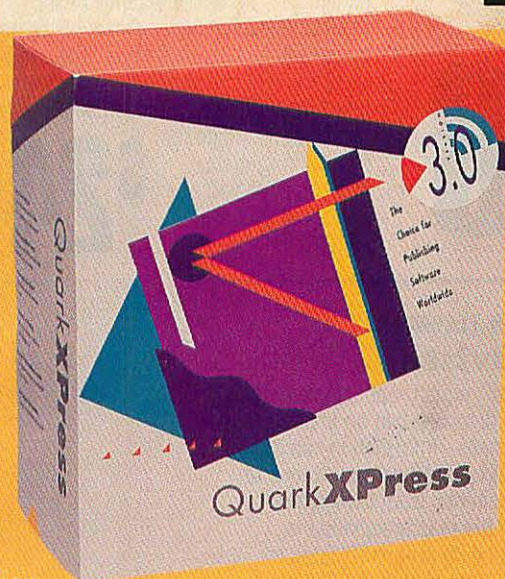
INDIVIDUAL

Training for PageMaker 4.0

Takes you through a series of step-by-step on-screen lessons which teach you to take full advantage of PageMaker 4.0. Users will learn document and file concepts, use of fonts, sizes and formats, page set-up and printing, utilizing section options, and creating style sheets. Includes

checking and hyphenation, creating an index, tables and footnotes, using print merge, creating custom menus, preferences and learning the ins and outs of the trade. #03758

\$29



QUARK XPress 3.0

XPress 3.0 boasts a more intuitive user interface, many new features, plus redesigned and reorganized documentation. New measurement and page palettes provide the user with interactive on-screen access. A library stores frequently-used items and a pasteboard provides a work area next to each page. You can group text and graphics as single elements and rotate them a full 360 degrees in .001 degree increments. Color trapping ensures precise color printing. #03488

\$519

FRASET

Ready, Set, Go! 4.5

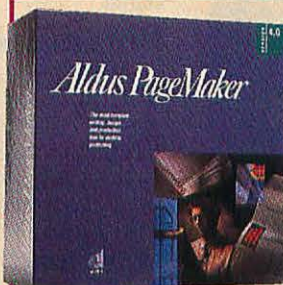
Ready, Set, Go! has all the desktop processing functionality you need including multiple document windows, powerful typographic tools (such as control of leading, font size, and baseline shift to .01 point), as well as drawing tools and color capabilities including PANTONE color specification)

Ready, Set, Go! also features interactive facing pages, a true WYSIWYG display, and five levels of page magnification. It's a great combination of value and performance. #01370



164

DTP POWER FROM ALDUS



ALDUS

PageMaker V4.01

PageMaker 4.0 goes beyond the paste-board metaphor that made the original PageMaker a smash hit. New features include a blindingly fast Story Editor, extended support for color, the ability to rotate text, a built-in dictionary and a spell checker. Files can have up to 9999

pages in length and multiple files can share a common index. You also get much more sophisticated type control, including the ability to adjust the look with point-sized dependent kerning on any text in increments of .01 point and a condense/expand range of 5% to 250%. #03223

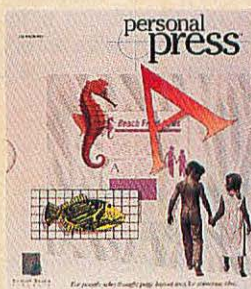
\$497

Personal Press

Personal Press is for people who want the power of publishing with a minimum investment of time and money. A page layout program with a full-featured word processor and powerful graphics capabilities, Personal Press includes all the

\$198

features you need for nearly any desktop publishing task. Helpful visual previews and on-line help. #03880



POSTCRAFT

Effects Specialist

Transforms bit-mapped, PostScript or True Type fonts into sparkling headlines or eye-catching

\$94

logos. Type in a word or two, and select the desired effects and options. Features like WYSIWYG display, color support, skew, rotate, kern and a complete background generator are included. Imports/exports PICT or EPS Files. System 7 compatible. #04049



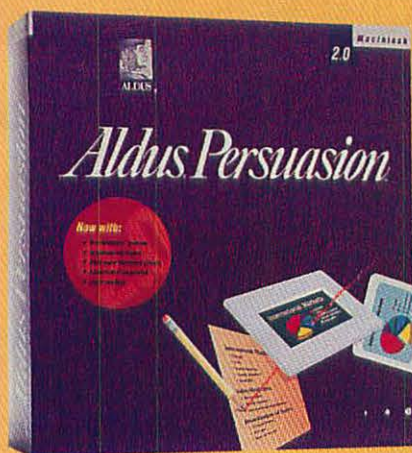
POSTCRAFT

Printer's Apprentice Layouts

Output camera-ready, professionally designed documents instantly! Layouts contain a variety of templates for all your business needs, including: 33 brochures (2,3 & 4 panel), 14 newsletters (1,2 & 3 columns), 82 business cards (horizontal, vertical, bookfold, gatefold, shortfold horizontal and vertical, tent evenfold and tent viewfold styles), 35 letterheads, 48 envelopes, 2 business reply cards and 5 flyers. Also available are additional flyer & stationery packs. #04086

\$79

OPEN 24 HOURS • CALL: 1-800-248-0800



ALDUS Persuasion 2.0

Let Aldus Persuasion 2.0 do all the work of developing presentation graphics. Select one of the predefined templates (or create your own), and type your ideas into the outliner. Persuasion automatically prepares your slides from the outline. Version 2.0 has a larger template library, and its AutoTemplate function enables you to preview, combine, or change template designs at will. Persuasion provides a variety of predefined charts and graphs (or you can create your own). It automatically generates

speakers' notes and handouts. You can use the slide show mode (with 15 different wipe and dissolve effects) for your presentation, or for a self-tuning demo. Persuasion includes drivers for the most popular printer and film recorders. #02424

\$328



MICROSOFT PowerPoint 2.01

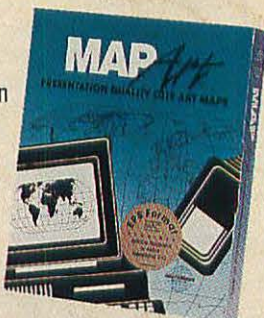
Presenting Microsoft PowerPoint for the Macintosh. PowerPoint comes with WYSIWYG technology - create slides or overheads directly on screen. Use the built-in graphing tool to create business charts. A new breed of desktop presentations software that lets you create the most unforgettable presentations you - or they - will ever see. #01220

\$244

MICROMAP SOFTWARE

MapArt

MapArt is the most comprehensive collection of clip art maps available for the Macintosh. Created by professional cartographers, MapArt includes detailed maps of every region in the world. MapArt lets you create customized maps quickly and easily. You simply open a MapArt file with your graphics program. Then use the tools in the program to customize the map. Add fill patterns, graphic objects, drop shadows, text and numbers. Then bring the map into a desktop publishing or presentation program. #04356
#04355 MapArt: MacPaint \$39
#04357 MapArt: PICT \$89



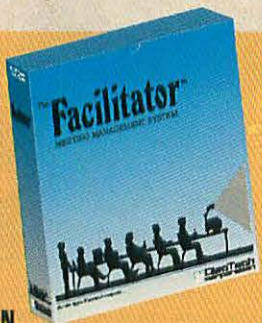
\$89

NEWTON TECHNOLOGY GEOvista

GEOvista™, a geographic presentation system, displays data on presentation-quality maps. Information can be imported from other applications or entered directly from the keyboard. Areas of the map are shaded to represent data ranges selected by the user. Included with GEOvista are 52 template maps, one for each of the 50 states subdivided by county, maps of the U.S. subdivided by state and much, much more. #00226



\$169

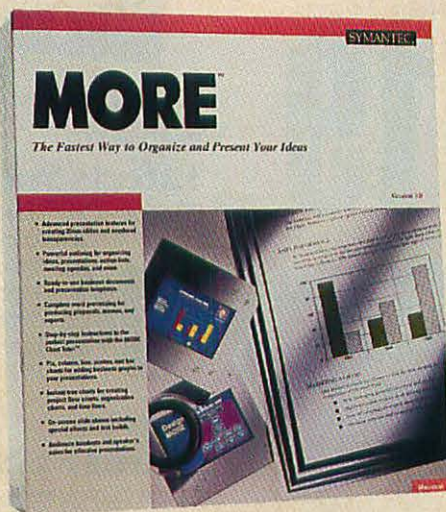


DISC TECH CORPORATION

The Facilitator

The Facilitator™ means instant meeting efficiency and effectiveness. All aspects of meeting management are provided: Logistics, Purpose, Desired Outcomes, Attendees, Electronic Agenda with timekeeper, Action Items, Notes and more. Problem solving tools include Brainstorming, Bucketing, Fishboning, and Pareto Analysis. Attendees will be able to depart with meeting minutes in hand! #04550

\$179



SYMANTEC More 3.1

Use More 3.1 to organize and prepare your next presentation. It will even run your slide show for you. You can start by typing your thoughts into the Outliner, and then More help you organize them when your ideas start to gel. With More, it's easy to import clip art to illustrate your point, or you can create your own with More's dazzling charts and graphs to bring your data to life. When you're finished, More will print out overhead transparencies, 35mm slides (overnight through Autographix Service Center), and professional looking audience handouts. #04464



\$264

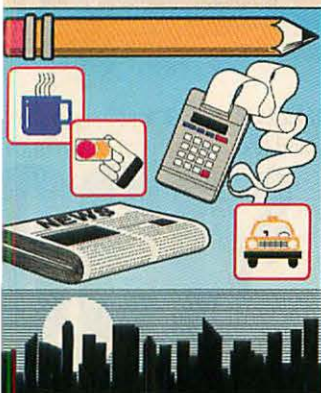


THE PROFESSIONAL'S CHOICE IN EPS CLIP ART

DREAM MAKER SOFTWARE

Cliptures

outstanding artwork at only pennies per drawing! Each Cliptures volume gives you a wealth of: Dynamic illustrations perfect for all kinds of projects. Versatile, ready-to-use artwork that's faster and easier than creating your own graphics from scratch. High resolution EPS images that look great even when they're enlarged, reduced, or stretched. Cliptures works with any software program that accepts EPS (Encapsulated PostScript) files. A PostScript compatible printer or interpreter program is recommended for best results.



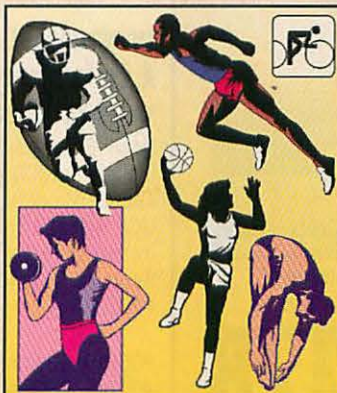
Volume 1: Business Images

Gives you 148 terrific business illustrations including a wide selection of male and female executives and a variety of tantalizing business cartoons, graphics and symbols. #03998



Volume 2: Business Images 2

Adds another 206 powerful business illustrations of men and women at work, plus people silhouettes, business cartoons, aircraft, money, telephones, and lots of computers. #03999



Volume 3: Sports

Puts 228 fantastic sports images at your fingertips. Includes lots of men and women athletes and a rich collection of other outstanding sports graphics, symbols and icons and more. #04000



Volume 4: World Flags

Contains exquisitely detailed national and civil flag illustrations from all the independent and dependent countries of the world, plus various international organization and code flags. #04282

YOUR CHOICE

\$67



BITSTREAM Font Pack 3

The Bitstream Font Pack 3 includes four styles each of Zapf Humanist and Gaskerville. Use these to make text enticing and easy to read. Use these for signs, flyers and invitations. #04010

Font Pack 4

The Bitstream Font Pack 4 includes four styles each of incised 901 and Goudy Old style. Use these to make text enticing and easy to read. You also get five decorative fonts that add flair and flash to your words. #04011

\$98

YOUR CHOICE

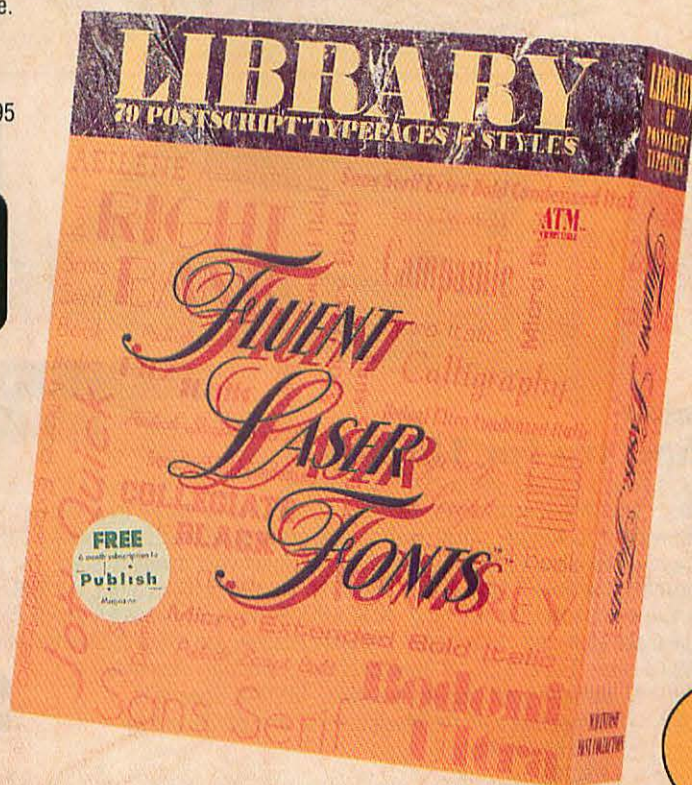
CASADY & GREENE

Fluent Laser Font Library 4.0

The library includes 79 PostScript typefaces and 79 truetype faces. John Dvorak once recommended these fonts for an Eddy award! The purchaser is entitled to a 6-month free subscription to Publish Magazine. No one else has this kind of variety and style at such an affordable price.

(This collection previously sold separately in 21 volumes for \$89.95 per volume.) #00315

\$99



OPEN 24 HOURS • CALL: 1-800-248-0800

CAERE

Typist Plus Graphics 2.0

The first low-cost, hand-held scanner designed for Optical Character Recognition (OCR) that scans text directly into an open word-processing or spreadsheet application, now features a Graphic Editor that comes with a complete set of graphic tools for editing your scanned images and the ability to create full tone images in 256 levels of gray.

#04459



\$478

**\$1300
VALUE**

THUNDERWARE

LightningScan Pro 256

with Read-It! OCR and Enhance - Free!

New! Scan graphics with true 8-bit hardware gray scale and text for one unbeatable price. Includes \$800 in software: our top-rated ThunderWorks scanning software, Read-It! Personal OCR 3.0, and Enhance 2.0 for gray scale editing. Includes the SnapGuide straight scanning system. Requires two Megs of RAM, four Megs recommended.

#00520

#00519 LightningScan Compact **\$289**
#02212 LightningScan 400 **\$384**

#01242 Thunderscan Plus **\$199**
#01353 Mac II Power Accessory **\$49**

\$499



DEST

Personal Scanner with Recognize OCR Software

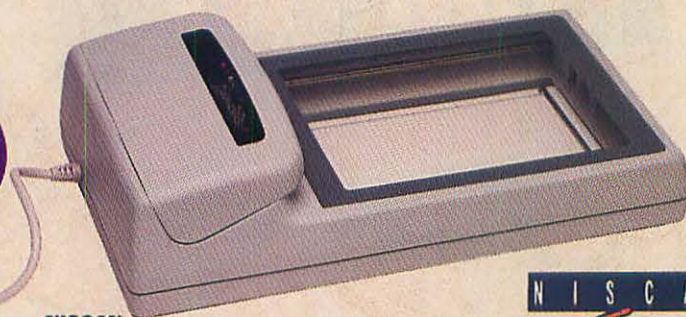
The first scanner to combine full-page (8.5" wide), handheld scanning and a 10 page automatic document feeder into one desktop unit. Read almost any document into your computer for word processing or desktop publishing applications.

Personal Scan comes as a kit that includes: 300 dpi resolution, cables and Recognize! #03929

#03930 Recognize Software \$515

\$685

**16
MILLION
COLOR
SCANNER**



NISCAN

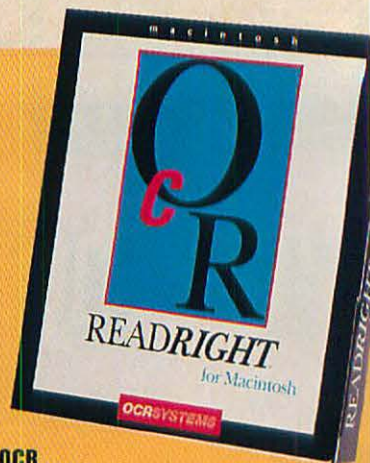
Spectra For The Mac

Give your pre-press and multi-media projects 24-bit color polish with NISCAN Spectra for the Mac. NISCAN Spectra scans 16 million colors in one 4-inch by 6-inch scan pass, at resolutions of 50 to 400 dpi. This small-format scanner with an upside down flatbed scanning mechanism allows you to place the scanner over your image to scan. For users who want a scanner that does it all, NISCAN offers not only 16 million colors, but 256 8-bit gray-scale, line art, and transparency scanning. NISCAN Spectra is also ideal for image capturing and image database archiving. ScanDo/DA software lets you run NISCAN Spectra under Finder and MultiFinder. Using NISCAN Spectra is easy: it simply connects through your modern interface. NISCAN Spectra is compatible with the Macintosh SE and SE/30 and all Mac IIs and higher.

#04260

\$624

**MAJOR CREDIT CARDS
ACCEPTED**



OCR SYSTEMS

ReadRight

With ReadRight and a full-page scanner you can easily and efficiently convert paper documents into editable computer text files. Recognizing with an accuracy of 99.9%, ReadRight automatically separates text from graphics and outputs text directly into your word processor, spreadsheet or database. Advanced features include a built-in dictionary, error checker and deferred processing.

#00461

\$329

**The Mac
Zone**
Established 198

C.O.D. ORDERS ACCEPTED

Marstek

800 DPI Hand Scanner

INCLUDES

Enhance



M-800 MAC 64

MARSTEK**M-800 MAC 64 Hand Scanner**

The M-800 Mac 64 is the first hand scanner to deliver a resolution up to 800 DPI. Providing 64 gray levels, the M-800 MAC 64 captures images with exceptional quality. For editing your image, the M-800 MAC 64 comes bundled with "Enhance" V.2.0, an 8-bit, True Gray-Scale, image processing software by MicroFrontier. Now, a complete solution to your desktop publishing needs! #04592

\$279**MARSTEK'S****"Langelo" Color Hand Scanner (8-bit Color)**

Marstek announces the first 18-bit color, true Gray-Scale, hand scanner for Macintosh. Imagine, Color Scanning with a single pass, capturing up to 262,144 colors in lighting speed. The Langelo offers resolution up to 200 DPI in Color mode and 400 DPI in True Gray-Scale mode. Scanned, edit your images with the powerful ScanLink, a 32-bit, advanced image processing package by MicroFrontier. With Marstek's Langelo, anyone can be an artist. #04593

\$499**MICROTEK MAKES SCANNING EASIER****MICROTEK****ScanMaker 600ZS**

Introducing the ScanMaker 600ZS, the newest addition to Microtek's award-winning series of color/grayscale scanners. Capable of scanning 24-bit color, 256 shades of gray and black and white, the ScanMaker 600ZS captures images with up to 600 dpi resolution. It boasts outstanding color image quality and features a new compact flatbed design. A built-in SCSI interface makes installation a snap! More amazing is the price... hundreds less than you would expect to pay for a scanner with this many unbeatable features. Included with every ScanMaker 600ZS is a full version of Adobe Photoshop. Adobe Photoshop, winner of MacUsers' 1990 Eddy Award for Software Product of the Year, is a sophisticated image editing and retouch program designed for artists and desktop publishers. #00369

\$1598**MICROTEK****ScanMaker 1850S**

Microtek's ScanMaker 1850S is a revolutionary new 35mm slide scanner that's perfect for desktop publishing, presentation graphics and multi-media applications. You can scan 24-bit color and 256 shades of gray at up to 1850 dpi resolution. With a scanning area of 35mm x 35mm, ScanMaker 1850S is versatile enough to scan slides in portrait and landscape modes. Included is a full version of Adobe Photoshop (winner of MacUser's 1990 Eddy Award for Software Product of the Year), a sophisticated image-editing and retouching program designed for artists and desktop publishers. #00370

\$2298**OPEN 24 HOURS • CALL: 1-800-248-0800**

MONITORS



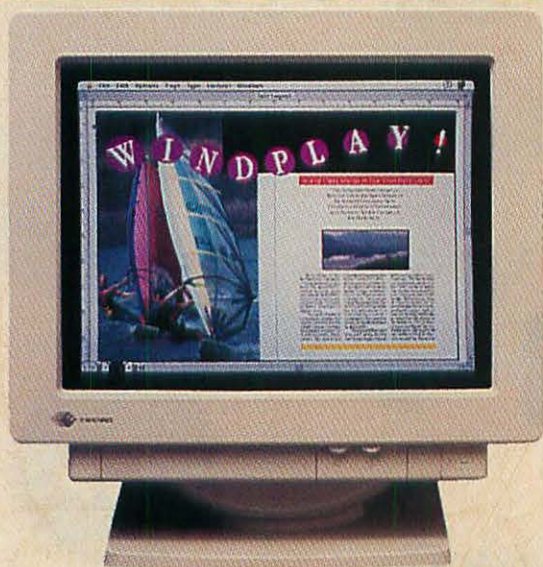
MASS MICRO QuickImage 24 Video Frame Grabber

The QuickImage 24 Video Frame Grabber captures 24 bit color or 8 bit gray scale images from full motion video. It fits in a single NuBus slot and does auto switching between NTSC and PAL signals. It accepts standard Composite and S-VHS input signals. A live preview window lets the user select the exact image desired. A Photoshop plug-in allows users to capture images directly into Adobe PhotoShop. It saves images as Pict2, Tiff or Tiff Compressed for desktop publishing, presentation or video projects. #00180



\$249

E MACHINES MONITORS

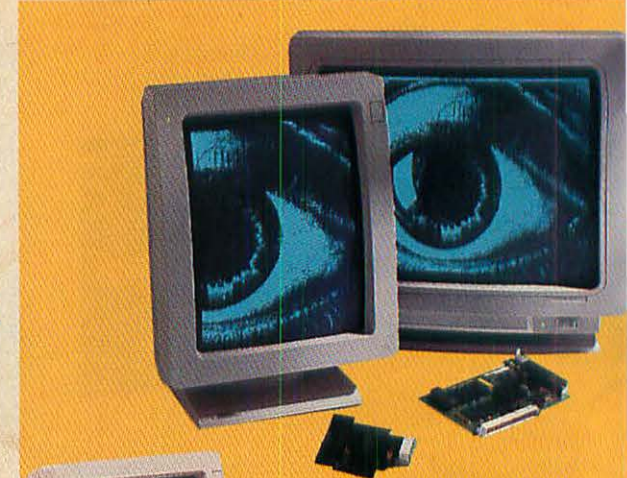


ColorPage T16

This sharp, clear, 16-inch Trinitron gives you 70% more workspace than a 13-inch display. 72 dpi, 832x624, 75 kHz, five mice winner. Uses the built-in video of the new Mac Quadra/040. #04105

#04151
DoubleColor LC Card

\$1148
\$399



GENERATION SYSTEMS

The Publisher Series

The Publisher Series features full-page and dual-page monochrome display solutions for all Macintosh models. In addition to the Portable Benefits, you receive additional workspace, flicker-free refresh rates, anti-glare coating, and a tilt and swivel base that adjusts to any viewing angle.



The Designer Series offers high-resolution 8 and 24 bit color display systems built to energize your passion to produce beyond your own perceived visual capabilities. The Designer 8 is a high-performance Trinitron® system offering 8-bit color/gray scale for the Mac II, SE/30 and LC. The Designer 24 features our patented R.A.C.E. technology and outperforms all other non-accelerated 24-bit boards. Low power consumption permits use in all Mac IIs, including the IIsi.

#04145 Full Page Display SE/30	\$599
#04146 Full Page Display II	\$599
#04147 Full Page Display LC	\$599
#04148 Full Page Display Classic	\$599
#04149 Full Page SE	\$599
#04588 14" Display	\$499
#00551 Mac II 20" 8-bit Color Display & Card	\$289
#00552 Mac II 20" 24-bit Color Display & Card	\$329



14" Display

#04588

\$499

The Mac Zone
Established 1984

FREE SHIPPING ON ORDERS PLACED BETWEEN 9PM & 7AM E.T.

NEW 21" COLOR SYSTEM FROM RASTEROPS

MONITORS



21" Color Monitor System

RasterOps' new two-page 21" graphics systems offer the precision, speed, and high performance you've come to expect for the leader in color technology. From photorealistic imagery to video capture and graphics acceleration, our five new systems offer everything you need for winning graphic design. The RasterOps 24XLI brings graphic design to new heights with two full pages of text and graphics and on-board acceleration. The RasterOps 24XLTV offers the same 24-bit True Color brilliance and on-board acceleration on the 24XLI, plus video capture so you can get all the best shots. With these advancements in the art and science of color, it's no wonder RasterOps aces the competition. #04567

\$3299

24XLTV

The RasterOps 24XLTV display board delivers 24-bit color at lightening speed by having QuickDraw acceleration built on the board. With the added support of live video in a window, 24-bit images can be captured from any NTSC, PAL or SECAM source and be included in any application. the 24XLTV supports the RasterOps 21", two-page display at a resolution of 1152x870. #00521

\$2999

\$3299

24XLI

The RasterOps 24XLI display board has QuickDraw and GWorld acceleration built in. You can add up to 16MB of video DRAM which can be used to enhance the GWorld support or be used as a Ram disk. The RasterOps 24XLI supports the RasterOps 21" two-page display at a resolution of 1152x870. #04118

RASTEROPS PRODUCTS

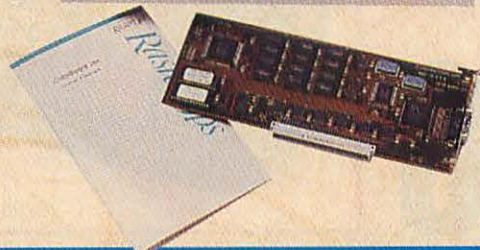
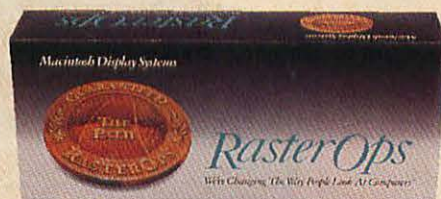
620	Colorcad Trinitron	3299
379	Colorboard 208 24Bit Upgrade	280
627	Colorboard 264/30 24Bit 351	638
427	Colorboard 364 (Video)	699
503	Imagepak Still Compression Bd	369
483	RasterOps TV Tuner	375
482	RasterOps Video Expander	499
618	19" Color Trinitron	3199
619	19" Color Trinitron	3199
624	19" Hitachi Color	1999
223	19" Mono/GS Monitor	999
625	19" Mono/GS Monitor	999
567	21" Color Monitor	3299
035	24S	449
064	24Si	699
005	24STV 2536	1248
118	24Xli (2544)	3299
521	24XITV (#2548)	2999
910	8XI Video Board	749
617	8Xli Vram Expan Kit	1499
623	Accel 16Mb Dram Exp	3399
115	Clearvue/GSxl Card	749
621	Correctcolor Calibrator	2199
637	Expresso Slide Scanner	699
622	Tilt & Swivel Base	229

RASTEROPS

Expresso Personal Slide Scanner

The Expresso™ Personal Slide Scanner is the first affordable product which can scan negative or positive film and output the video signal to any NTSC or PAL compatible display. It is compatible with all RasterOps video products on the Macintosh and is also compatible with any VCR, video camera or can be connected directly to a television. With the Expresso, delicate color saturation, hue and balance control as well as zoom can be achieved through manual adjustments. #04598

\$609



RASTEROPS

ColorBoard 264/SE30

Add COLOR to your Macintosh SE/30 with the ColorBoard 264/SE30 and support 13" monitor (640 x 480 pixels) with 24 bit color and 8 bit Grayscale. 1.5 MB Video increase your speed and productivity. #02627

\$638

OPEN 24 HOURS • CALL: 1-800-248-0800



ARTICULATE SYSTEM

Voice Navigator II

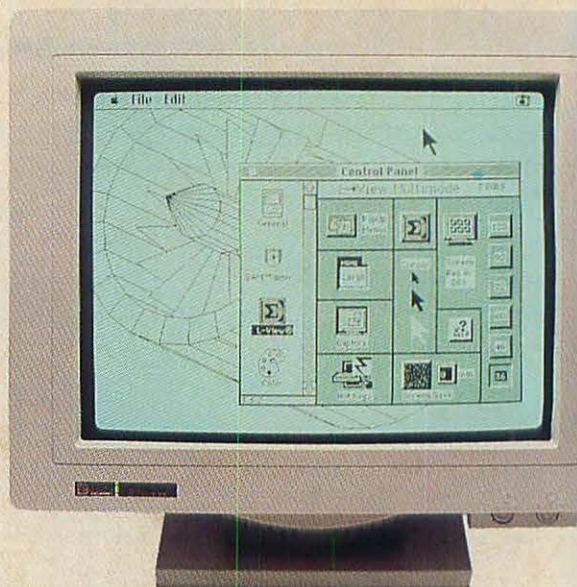
Voice Navigator II speeds up your work & reduces key strokes by allowing you to control your Mac applications by voice. Format documents, control Multimedia presentations, select tools and much more without every hitting a key! Works with anyone's voice, accent, language and Mac application. #03932

\$588

Voice Impact Pro

Voice Impact Pro is a higher quality digitizer with more features: Real time MACE compression and an asynchronous externally clocked serial interface for high speed data transfer, Unidirectional Mic and more! #04749

\$199

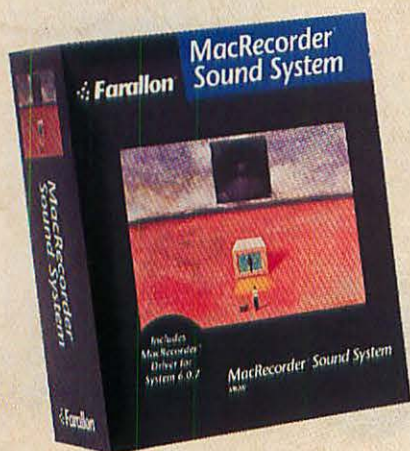


SIGMA DESIGNS

PageView

A full-page display system offering the ultimate in viewing flexibility and comfort. Its 15" portrait screen, with up to 704x940 resolution (72, 80, 88 dpi) graphics resolution, and industry-leading 97 Hz refresh rate, let you view your entire page as you compose, flick free. Includes Low Emission technology standard. PageView is ideal for word processing and entry-level desktop processing. Models to support Macintosh SE, SE30, or IIfx. #03857

\$850



FARALLON

MacRecorder

The MacRecorder Sound System is an audio workshop that lets you record, edit, and play back live or prerecorded sound on your Macintosh. Use the MacRecorder Sound System to enhance your desktop presentations and training materials with voice music. Features a built-in microphone, mike jack, line-in jack, and input level control. #02584

\$158

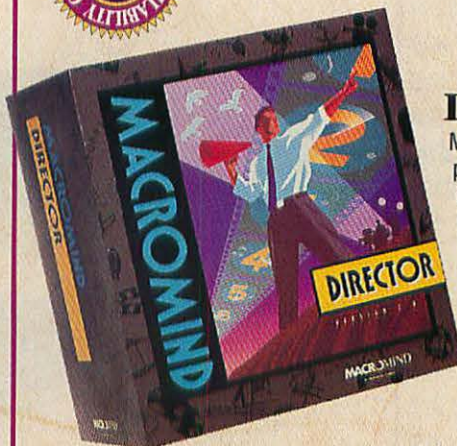
PROFESSIONAL QUALITY ANIMATION FOR YOUR MAC

MACROMIND

Three-D 1.0

A professional tool for creating high quality 3D animations and photorealistic images for use in video and multimedia production. Three-D gives you a hierarchical time-line to easily and precisely animate unlimited shapes, lights and cameras. #00838

\$1149



Director 3.0

MacroMind Director 3.0 is the multimedia presentation and animation tool that helps communicate with greater impact. It's fast and easier for users to get professional results. Movies and presentations sound, look and play better. #00839

\$689

#02982 Accelerator \$124

C.O.D. ORDERS ACCEPTED

The Mac
Zone
Established 1984

DESIGN YOUR OWN HOME

Interiors



DESIGN YOUR OWN HOME

Landscape



DESIGN YOUR OWN HOME

Architecture



ABRACADATA

Design Your Own Home

Whether you're a novice or professional, you can now design your own home with these three programs: Architecture, Interiors and Landscape. Architectural Design enables you to draw

floor plans, side view building plans and structural details in a fraction of the time it takes to draw by hand. With Interior Design you can arrange furnishings in your floor plan, explore color schemes and make changes often and easily. Use Landscape Design to create full-color plans for your property by experimenting with flowers, shrubs, trees, walkways, steps, fences and more. All include dozens of sample plans.

03609 Design Architecture
03610 Design Landscape
03611 Design Interiors

YOUR CHOICE

\$64

CLARIS



Claris CAD

Professional design and drafting for the Macintosh

CLARIS

CAD 2.0

Claris CAD is the professional design and drafting tool for engineers and architects. It integrates a wealth of two-dimensional design and drafting features, including mouse/keyboard entry, construction of fillets, tangents and perpendiculars and automatic dimensioning, while fully utilizing the Macintosh interface. Version 2.0 includes a new interface Graphic guide, which intelligently guides you, anticipating the next steps and locating and indicating key geometric points on screen.

#03693

\$644

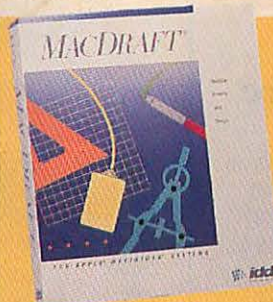
PARACOMP

Swivel 3D

Swivel 3D is a three-dimensional drawing/modeling program. Intended for graphic artists, engineers, and designers to create complex models for use in presentations, desktop publishing and schematic designs. Features include: a linked database with constraints that allow a user to move the objects' relative movement and orientation, Z buffering, which solves object intersections and a full range of rendering commands, such as shadowing, projecting images and setting light sources. #03619



\$434



INNOVATIVE DATA DESIGN

MacDraft 2.1

A classic precision drawing program for engineering design and drafting and technical illustration. MacDraft now features a moveable geometric drawing tool palette, support for PostScript output, layers (limited only by memory), on-line symbol libraries, 44 different scales, dimension lines, Bezier and spline curves, automatic area calculation,

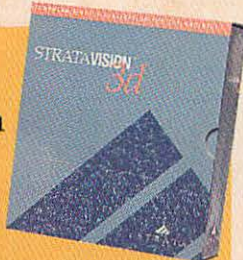
full Macintosh color support and more! Reads TIFF (scanned images) and MacDraw II files. MacDraft is the most powerful, low-cost solution to your drawing and drafting needs. #00429

\$278

STRATA, INC.
StrataVision
3D 2.0

Create scenes complete with objects, lights, shadows, textures and reflections. Includes powerful, yet easy-to-use modeling tools. Import 2D and 2D objects from other programs. Create 3D text and logos easily. New animation capabilities include linked objects, hierarchical paths, and geometric and surface metamorphosis. Use StrataVision 3D's powerful raytracer to create the most photorealistic images possible.

StrataVision 3D is compatible with System 7.0 and System 6.0.3+. #04088



\$515

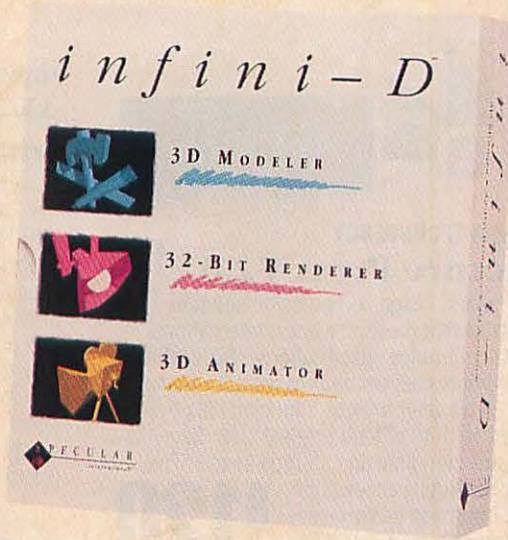


SPECULAR INTERNATIONAL

Infini-D 3D Modeler

Introducing Infini-D, an integrated 3D modeling, rendering and animation package for the Macintosh. Now you can generate photo-realistic images and animations with the easy-to-use interface you've come to expect from your Mac. #00815

\$647



OPEN 24 HOURS • CALL: 1-800-248-0800

PANTONE, INC.

Process Color Imaging Guide

The perfect companion to all Pantone-licensed software Programs. It provides a visual comparison of solid PANTONE Color and process simulations as they would appear on the final printed piece. As many PANTONE Colors cannot be satisfactorily

\$44

reproduced in four-color process, this publication provides the user with the information to best decide whether to specify spot or process color while working on the desktop. #03435

**DENEBA Canvas 3.0**

This new version delivers more than one hundred new features including

significantly enhanced text handling, object blending, Bezier font outlines, and full support for Deneba's revolutionary Open Architecture technology. #00803

\$297**FGM PICTURE This**

PICTure This is an application and desk accessory that converts a wide range of graphics file

\$64

formats to Macintosh PICT and PICT2 formats. #00809

**STORM TECHNOLOGY****Picture Press V2.0**

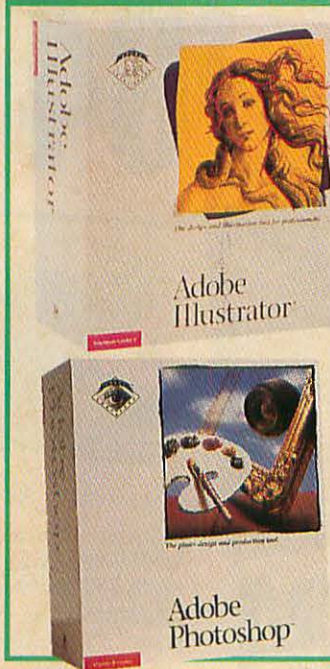
The fastest image compression solution available that meets the latest international JPEG committee specifications. PicturePress 2.0 compresses/decompresses gray-scales and 24 bit color images, reducing files from 1/2 to 1/100th of their original size. Save file transmission time and storage space. The optional Nubus accelerator card improves performance of PicturePress 10-30 time. #04335

\$120

With accelerator
#04336

\$653**Process Color System Guide**

When you need a much broader selection of process colors, turn to the PANTONE Process Color System Guide. This fan-out process color selector provides users with a visual color standard and screen percentage values for over 3,000 new CMYK combinations which are easily created. Specified and reproduced with your favorite graphics, program. #04056

\$44**POWERFUL PRODUCTS FROM ADOBE****Adobe Illustrator 3.0**

You can create PostScript technical illustrations, free form sketches, or even trace scanned images automatically. Improvements in the user interface make using Illustrator easier than ever. The most significant new function allows you to enter and manipulate text directly on the page without working through a dialog box. #03558

\$369**Adobe PhotoShop 2.0**

The affordable Macintosh image-processing program with enough power and versatility to be used as a paint, preprocess, color correction and darkroom system. And it does it all in living 24-bit color. Adobe PhotoShop's full range of filters, painting, drawing and selection tools give you the control and precision you've been missing. #04042

\$549**ADVANCED VISION RESEARCH
AVR 8000/CLX
Image Scanner**

Introducing the new true 400 dpi scanners from AVR. These new models join the AVR 3000 Series of 300 dpi grayscale and color scanners. The AVR 8000 Series offers models capable of scanning 16.8 million colors and 256 shades of gray at true 400 dpi. And, through a custom interpolation process, the AVR 8000 Series can scan up to 1600 dpi! Included with both the AVR 3000 and 8000 scanners is AVR's ScanPack, a set of scanning and image enhancement tools; Adobe Photoshop, and a 2-year warranty. Other features include JPEG-compression/decompression, Apple Scanner emulation, an optional 100-sheet Automatic Document Feeder, and an upgrade path from grayscale to color.

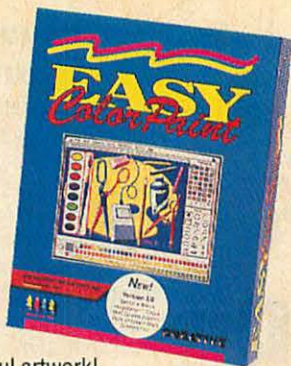
#04551 AVR 3000/CL Plus

#04552 AVR 8000/CLX

\$1349**\$1549**

The Mac
Zone
Established 1984

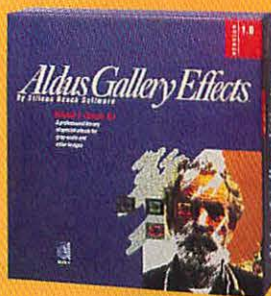
ALL U.S. ORDERS INSURED - NO EXTRA CHARGE



Easy Color Paint

te colorful artwork!
Color Paint is really easy to use. Whether you're a beginner or painting pro, easily select the complexity level desired, from ECP Junior to ECP Artist, and in no time you'll be creating colorful sketches and paintings. This critically acclaimed color painting program features such tools as horizontal and vertical flipping, rotation, stretching and shrinking, color blending - and more. Mark your creativity and add flair to your work. #03862

\$44



ALDUS

Gallery Effects

Aldus Gallery Effects is a graphics program that gives designers the power to transform color, grayscale or even bitmapped images into sophisticated art. With the Gallery Effects library, artists can produce vivid, dramatic art easily, reliably and with consistent results. Use while working in leading applications that support plug-in filters, as a stand-alone application, as a stand-alone application, DA, or for applying effects to PICS animations.

#04121

\$134

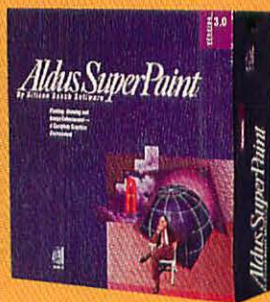
ALDUS

SuperPaint V3.0

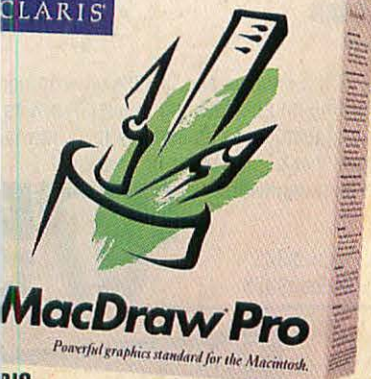
Aldus SuperPaint is the complete painting, drawing and image-enhancement tool - whether you're creating fine art, business illustrations, full color or black and white. We've combined these elements into one unified graphics environment that works exactly the way you expect - no surprises, nothing to come between your visual concepts and the images you produce on your Macintosh®.

#04190

\$134



CLARIS



CLARIS

MacDraw Pro

Powerful graphics standard for the Macintosh! Tear-off palettes allow access to a variety of innovative and time-saving features. Features include a flexible style bar, powerful gradient fills, new precision zoom.

Now you can print at over 300 dpi.

#0373

\$279



DELTA TAO

Monet/Color MacCheese Bundle

Monet - A totally new type of graphics application. Monet lets you create stunning impressionist paintings. Color MacCheese - Color paint that's powerful enough for artists, yet simple enough for anyone. Does anti-aliasing, transparency, full color patterns, transmutation and more. #04587

\$249

FRactal Design

Painter

Fractal Design Painter™ lets your Macintosh create original art or embellish scanned images with realistic natural media effects by duplicating traditional tools and textures in 24-bit color. Painter includes brushes, pens, chalks, and even paper grains (22 included). Painter interacts with virtually all Macintosh illustration and imaging software, supporting PICT, TIFF, ColorStudio and PhotoShop formats.

#04460



\$199

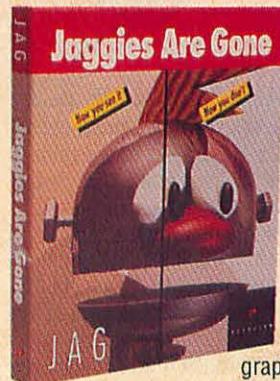
MacVision

MacVision is an easy-to-use video digitizer for your Mac which captures images of 3-D objects. You can then edit, print, and save these images as files in a variety of formats. MacVision produces images with 64 shades of gray for use in most popular publishing and graphic arts programs.

#03705



\$258



RAYDREAM

JAG™

JAG is for anyone concerned with the look and visual impact of the images and animations they create. It is appropriate for use with all color paint packages, 24 bit photo retouching software, 2D animation and multimedia toolkits, and 3D modeling and rendering environments. JAG is perfectly suited to the needs of advertisers, animators,

graphic designers, illustrators, multimedia producers, and 3D enthusiasts alike.

#04150

\$69

OPEN 24 HOURS • CALL: 1-800-248-0800

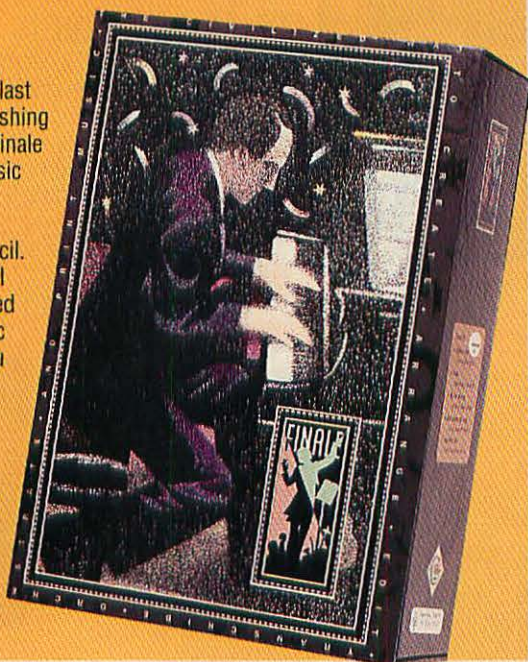
CODA

Finale

Finale is designed to be the last music composing and publishing software you'll ever need. Finale understands music and music notation. Compose, edit, transcribe, orchestrate and publish without using a pencil. Improvise a score on a MIDI keyboard and see it displayed on screen in standard music notation in seconds. All you need is the inspiration to write music. Finale does the rest.

#03127

\$548



OPCODE SYSTEMS, INC.

EZ Vision

EZ Vision is an intuitive M sequencer for recording, editing and playing back n with MIDI synthesizers.

Equipped with familiar tap deck style controls and 16

tracks, it acts as a complete

recording studio, allowing graph

editing, arrangement and mixing

EZ Vision is compatible with m

notation programs, allowing pri

scores. #03937

\$99

The Book of MIDI

The Book of MIDI is an award winning hypercard stack that teaches beginners all about MIDI. It incorporates animation, digital sound, a dictionary of MIDI terms, and even has an interactive MIDI Game! #04069

\$29



GREAT WAVE SOFTWARE

ConcertWare + MIDI 5.0

ConcertWare®+MIDI is a complete music package for the amateur, professional, or hobbyist. The Music Writer allows you to record in real time (or step time) as you enter music with a MIDI compatible keyboard (or by using the Macintosh keyboard or the mouse.). Two other programs are also included. The Music Player plays songs through your synthesizer. The InstrumentMaker® application allows design of synthesized sounds for playback directly on the Macintosh.

#03187



\$97



MARK OF THE UNICORN

Performer

Performer Version 3.6 is a creative and flexible environment for composing, recording and performing music. From its comprehensive array of features to its intuitive user interface, Performer is the sequencer of choice for professional musicians and recording engineers.

#02500

#04429 Midi Time Piece \$375

#04591 Video Time Piece \$375

\$375



\$169

★ NEW PRODUCT ★

MONSTER GROUP, INC.

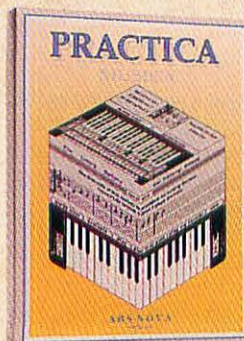
MacSpeaker

MacSpeaker opens the door to h fidelity sound on your Macintosh.

MacSpeaker is a compact, high power speaker with a unique Sonic Imaging

Control that gives a rich, full stereo sound in an up. (Optional carrying bag available) MacSpeak compatible with any Macintosh.

#00201



ARS NOVA

Practica Musica 2.2

One of MacUser's "Best 200 products of 1989" Practica Musica is a music tutor that covers ear training and music theory - for both beginners and advanced students. Using either the Mac speaker or a MIDI instrument, it teaches you how to recognize and notate intervals, chords, melody and rhythm, identifies chords that you play, gives you practice in writing tunes by ear and much more. It will even invest a short melody in your choice of key, scale and meter! Includes coordinated textbook Windows on Music.

#01479

\$68

PASSPORT DESIGNS

MIDI Interface

Make music with your computer! Passport's MIDI Interface provides the industry standard connection between your computer and MIDI synthesizers. Compose, record, edit, learn to play, notate and print music more easily than ever before. With a Passport MIDI Interface you're well connected to the award winning library of Passport Music Software.

#01355

\$79



The Mac Zone
Established 1984

CALL 1-800-248-9948 IF NOT 100% SATISFIED

PARAGON CONCEPTS

QUED/M

QUED/M is virtually indispensable, with features found nowhere else! The One-of-a-Kind Productivity Tool: Text Editor with Macros. With 70 menu items, more than 50 macros, and custom features.

ED/M (QUality, EDitor with Macros), is the most powerful text editor available. Macros can also be programmed or recorded to meet each user's needs.

\$74

True BASIC

John G. Kemeny
Thomas E. Kurtz

TRUE BASIC

True BASIC 2.5

Use the BASIC that gets results - fast! It combines all the best features of modern structured programming in a BASIC that's fast, clean and yet still easy to use. It's fast because it combines a code compiler, linker and editor in quick fix.

major software development. True BASIC is a solid, dependable solution.

\$54

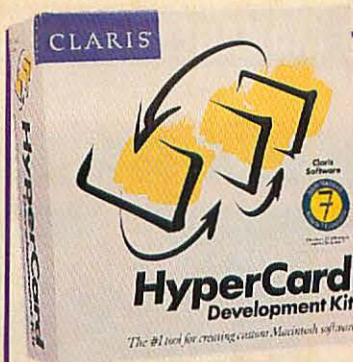
MEDIA LAB

ScriptExpert v2.0

ScriptExpert is push-button programming for HyperCard by Dan Schafer, the author of the best-selling book, HyperTalk Programming. ScriptExpert requires little or no programming experience. You can write grammatically correct scripts by pushing buttons and answering questions. ScriptExpert knows the rules for every command, functions, property and message in HyperTalk. It lets you focus on your project because it remembers the syntax and structure of your scripts. ScriptExpert is the ideal companion for HyperCard training classes. #03776



\$44



CLARIS

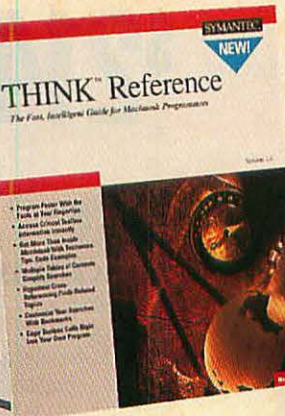
HyperCard V 2.1 Development Kit

Create and customize your own software. HyperCard software works like a pack of index cards. Store information on cards that appear on the Macintosh screen. Easily create and program buttons that access other cards or stacks with a single click. In addition to text, you can create and store graphics, scanned images—even sounds.

#04302

\$139

3 GREAT PROGRAMMING TOOLS FROM SYMANTEC



THINK Reference

THINK™ Reference is an essential tool for all Macintosh programmers. This convenient reference is a comprehensive guide to the critical system information that you need to program the Macintosh. As a professional programmer, you'll save time and effort as you quickly locate information using extensive hypertext search and cross-reference capabilities. As a novice, you'll learn faster and understand more through detailed descriptions of Toolbox routines, data types, and system globals, as well as informative

\$69

graphics.
#04066



Think C

Think C integrates the editor, linker, and compiler to form a complete C language development environment. Many major Mac applications have been developed in Think C, including Quark Xpress. Version 4.0 now supports Object Oriented Programming (OOP) with a number of compiler enhancements and a full class library. It provides full source level debugging and the compiler produces tight, highly-optimized codes. #04095

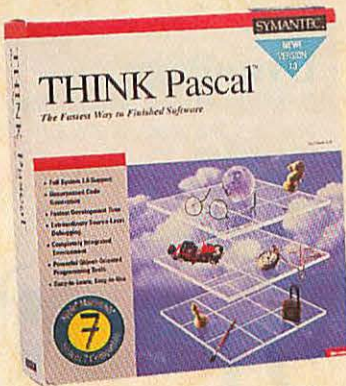
\$199

Think Pascal 3.0

Think Pascal 3.0 is a full Pascal implementation with all the features needed to write applications on modern Macs. The multi-pass compiler generates tight, optimized code that's 32-bit clean. It supports Object Pascal, SANE, the 68881 math coprocessor and the 8020. It's also compatible with MPW and can use MPW object files without conversion. The development environment makes programming clean and easy.

#04178

\$164



INFO MANAGEMENT SOLUTIONS FROM NEW ERA



NEW ERA
nuBASE

nuBASE is a full-featured relational database for the

Macintosh. It provides Graphical User Interface (GUI) that allows both the novice user and experienced developer to feel right at home. nuBASE provides information management solutions to all levels of business, regardless of database size. And best of all, it's fast and well documented. Users can create presentation quality entry screens and reports without programming, or may choose to custom design sophisticated applications using the advanced procedural language.

#04185

\$179

\$179



GOLDSTEIN & BLAIR Mac Bible Guide to FileMaker Pro

FileMaker has been by far the most popular Mac database for years.

But very few guides to the program exist, and none of them covers the new Pro version in a systematic and understandable way. Our new *Guide to FileMaker Pro* does exactly that. Moreover, it's the only book written for the 400,000 people who use FileMaker every day, not just for database experts. *The book* begins with fundamental database concepts and details FileMaker's capabilities (and limitations — something always left out of the manual) and includes practical solutions to scores of the most common problems users confront.

#04093

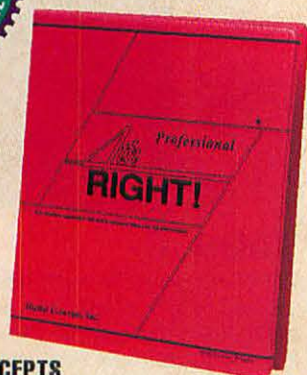


FOUNDATION SOLUTIONS EPlanner 2.0

EPlanner is a mid-range project planning and tracking application for corporate and private, hands-on project managers needing a simple yet robust tool for planning and tracking projects. EPlanner makes full use of the Mac interface for manipulation of Gantt charts, calendars, resource pools and chart symbols. EPlanner is intuitive to use and has complete on-line hyper-text help.

#04196

\$159



DIGITAL CONCEPTS 4thRIGHT!

Slash 4D development times! Produce feature-rich applications in record time. 4thRIGHT! and 4thRIGHT! Professional are the most complete solutions available to speed you through your 4th Dimension projects.
#04566 **\$240**

#04560 4thRIGHT!
Pro \$449

\$249

\$71



**PORTFOLIO
SYSTEMS**
**Dynodex
2.0**

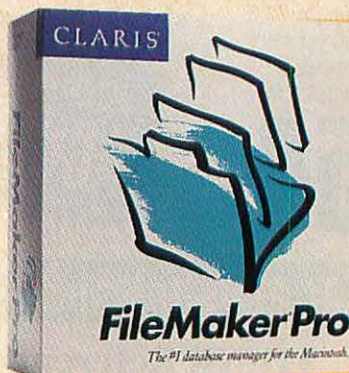
Dynodex stores names, addresses, numbers, and finds

information fast. Print double-sided directly onto standard organizer-size paper.
#00119

\$71

DynoPage

DynoPage lets you print any Mac file on double-sided pages of any size. It prints spreadsheets, project lists, sales plans, etc. on personal- organizer pages. #03977



CLARIS FileMaker Pro

FileMaker Pro is an extended flat file manager. Its look-up function extracts information from other files. The new graphics tools streamlines the generation of reports and layouts.

User-definable buttons automate repetitive tasks or activate scripts. #03478

\$214



**AFTERHOURS
SOFTWARE**
TouchBase

TouchBASE is a database to keep track of personal and business contacts. It's handy all the time because it is a desktop accessory.

TouchBASE can print envelopes, labels, address books, fax cover sheets, and reports. It's even a multi-user product so you can share your database on a network or use it all by yourself.

\$78

#03908

#03908

\$78

The Mac Zone
Established 1986

30-60 DAY MONEY BACK GUARANTEE **ON MOST PRODUCTS**

AATRIX SOFTWARE

CheckWriter II V3.2

The most versatile finance software in its class! V 3.2 offers complete budgeting, graphing, over budget warning, an address database with envelope/mailling label printing, tax summaries, cash projections, and income vs. expense reports. #00192

\$29

Ultimate Payroll

Ultimate Payroll handles it all, including pensions, DI, vacation/sick time, tips, piecework, and even reminds you to make your tax payments! Payroll 1 will print W-2's, 941's, and provide information for all other reports. #01875

\$198



CHIPSOFT

MacInTax

MacInTax is easy to use! Guides you to the forms you need' on-line help menus explain IRS rules; IRS Audit feature points out possible audit-triggering situations. On-screen displays look like official IRS forms. Free support for registered users by phone, mail, BBS, or or toll-free fax (7 days a week during tax season.)

Transfers data to

the proper forms -

automatically! Once you've entered

the data, MacInTax calculates even the most complex return in less than 10 seconds! #04603

\$61



NOL PRESS

WillMaker 4.0

Write your own valid will without ever calling a lawyer. Just answer the questions that WillMaker asks and

\$34

program constructs a personalized will with full legal standing. #00481

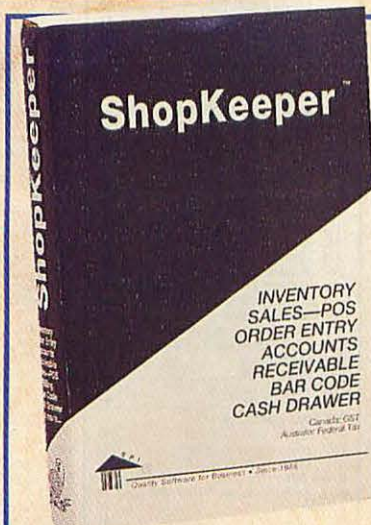


For the Record 2.0

For the Record helps you keep track of all the important information in your life: credit card numbers, safe deposit boxes,

\$31

emergency information, insurance policies, as well as household inventory. #03781



SHOPKEEPER

ShopKeeper 5.0

Inventory and point-of-sale (POS) software. Order entry, accounts receivable, Bar Code & Cash Drawer control, auto billing, customer records, price schedules, custom forms, 5 inventory modes, reports, mail labels, custom forms, promos, auto vendor orders, General Ledger links, and dozens of other features. Used by over 300 different types of businesses -

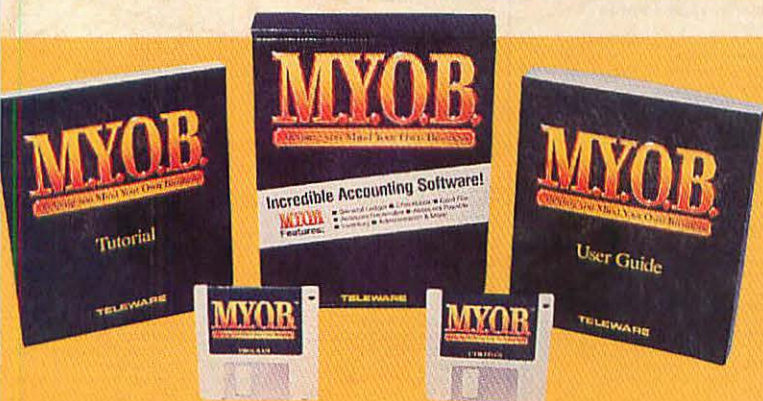
retailers, wholesalers, mfg's, schools and local government. #04111

\$249

Bill-IT

Bill-IT consolidates your invoicing, sales, billing, accounts receivable functions; handles up to 32,000 inventory and customer records, supports drawers, discounts, packing slips, layaways, mailings, and reports. Primarily for service businesses, professionals, clubs and associations with simple, unstructured inventory needs. #04599

\$114

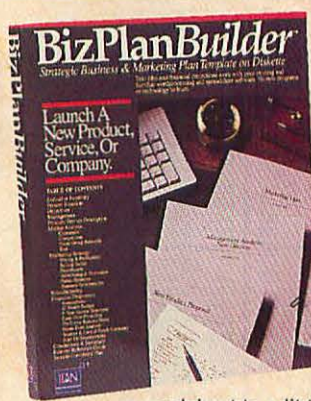


TELEWARE

M.Y.O.B. 2.0

M.Y.O.B. combines a powerful, fully integrated accounting program with management tools you can't find anywhere else! With just a few clicks, you can control every facet of your business... print your financial reports, reconcile your checkbook, do invoicing, even call your customers. M.Y.O.B. is easy to learn and is simple to use, so it makes "doing the books" a breeze. Its unique graphic navigation moves you instantly through every part of the program. #03535

\$138



JIAN

BizPlan Builder

BizPlan Builder 4.0 gives you a structured framework for developing your own business or marketing plan. All you need is a word processor and a

spreadsheet to edit the preformatted files

and adapt them to your needs. It has 90 pages of outlines, headlines, partial sentences and paragraphs, tables with built-in tabs, lists, and financial statements. Helpful prompts ask questions and make suggestions. It's useful for making presentations to investors, senior executives, or clients. #04257

\$93

SKU#	Description	Price
ACCELERATORS AND INTERNAL BOARDS		
Applied Engineering		
4072	Cable In 50 W/Fpu	1899
3673	QuadraLink	204
4155	QuickSilver II Si Math Chip	89
4154	QuickSilver II Si W/Fpu	308
0833	QuickSilver IISI Cache Card	269
4325	Transwarp Se Accel 25MHz W/Fpu	815
Connectix Corporation		
2654	Virtual - Sx/30, Ix, Ix2	114
2652	Virtual W/Pmmu Mac II 2.0.4	187
Daystar Digital		
4163	Dual Port IISI No Fpu	104
4162	Dual Port IISI W/Fpu	169
4182	Fast Cache IISI 64K Ram	276
4181	Fast Cache IISI 64K Ram	399
3730	Ram Powercard W/O Simms	499
3729	SCSI Powercard W/O Simms	1124
4323	Universal Powercache 33 Mhz	749
4634	Universal Powercache 33 Mhz w/FPU	979
4319	Universal Powercache 40Mhz	948
4320	Universal Powercache 40Mhz/Fpu	1199
4321	Universal Powercache 50 Mhz	1999
4322	Universal Powercache 50Mhz/Fpu	1999
Dave Computer Corp		
3493	030 Upgrade Iix	249
3228	030 Upgrade Mac II	528
3229	030 Upgrade Se	435
3818	Macsnap 596Kx 512Kx-4Mb W/SCSI	455
3230	Marathon 030 Upgrade Plus	528
1260	SCSI Port Adapter Macsnap	99
3222	Upgrade 030 Iix W/Virtual	528
3821	Upgrade 030 SE30 W/Virtual	528
Harris Laboratories		
4646	Classic Performer Accelerator	249
4647	68881 Mac Coprocessor Upgrade	74
PLI		
0191	PLI Quick SCSI	389
4109	SCSI II Card Pali	201
Radius		
4207	Radius Rocket	1799
Sigma Designs		
4202	Bullet 030 50Mhz W/Double Up	1399
0215	Sigma Double-Up Board	159
Storm Technology		
4336	Picture Press 2.0 W/Accelerator	649
Total Systems		
4054	Galileo 62P-Nubus	419
0531	Gemini Classic 40 Mhz No Fpu	1449
0545	Enterprise 030 Lc 16Mhz	609
4006	Galileo Video Card Plus	419
4292	Galileo II Video Card Plus	510
3633	Gemini 030 20Mhz W/Fpu	849
2902	Gemini 030 20Mhz W/O Fpu	798
2903	Gemini 030 25Mhz W/O Fpu	1199
0527	Gemini Classic 20 Mhz No Fpu	949
0528	Gemini Classic 20 Mhz W/Fpu	1049
0529	Gemini Classic 25Mhz No Fpu	1179
0530	Gemini Classic 25Mhz With Fpu	1349
0537	Gemini Classic 33 Mhz With Fpu	1749
0538	Gemini Classic 40 Mhz No Fpu	1649
0540	Gemini Classic 40 Mhz With Fpu	1749
0546	Gemini Classic 50 Mhz No Fpu	1699
3752	Gemini II 030 40Mhz W/Fpu	1850
0532	Gemini Ultra 33 Mhz No Fpu	1379
0534	Gemini Ultra 33Mhz With Fpu	1679
0535	Gemini Ultra 40Mhz No Fpu	1479
0536	Gemini Ultra 40Mhz With Fpu	1849
3632	Gemkit (Intl. Version)	125
2899	Gemkit (U.S. Version)	125
0291	Magellan 040 Board IISI	1995
0292	Magellan 040 Board Se/30	1995
0295	Magellan 040 Board I/O	2195
0034	Mercury 030 16Mhz W/Fpu (Plus)	675
0041	Mercury 030 16Mhz W/Fpu (SE)	550
0043	Mercury 030 16Mhz W/O Fpu (SE)	358
0036	Mercury 030 16Mhz W/O Fpu (SE)	318
0526	Mercury Classic 16Mhz No Fpu	549
0525	Mercury Classic 16Mhz W/Fpu	749
0050	Mercury Kit	104
0049	Mercury Ram Module	245
0048	Mercury SCSI Module (Plus)	188
Motorola		
2151	68882 Math Co-Processor 16Mhz	130
2152	68882 Math Co-Processor 25Mhz	140
2425	68882 Math Co-Processor 33Mhz	213
2719	68882 Math Co-Processor 40Mhz	299
2723	68882 Math Co-Processor 50 Mhz	348
2513	SCSI Tester	39
ACCOUNTING		
Aatrix		
0192	Checkwriter II 3.2	29
1871	Payroll 4.0	108
1875	Ultimate Payroll 4.1	198
1872	Ultimate Payroll 4.4 Multicompany	309
Absolute Solutions		
3369	Computerized Classic Accounting	223
Addison Wesley		
4590	Essentials of Accounting	34
Checkmark Software		
2412	Cash Ledger	114
2410	Multileader 1.3	234
2411	Payroll 4.5 (Use W/Multileader)	174
Chigsoft		
3528	IX-X Duo Expense Reports - Mac	47
3529	IX-X Gsa Expense Reports - Mac	47
3527	IX-X Payroll Tax Assistant	79
Clarix		
4306	Clarix Resolve	269
Computer Associates - Bedford		
4475	Accpac Bedford For Mac 1.2	138
Das Software		
4312	EasyLight Chkbook Acct 2.0	19
In House Software		
3782	In House Accountant	135
Inman Software		
0029	Business Sense 1.1	128
Nolo Press		
3781	For The Record 2.0 Mac	31
0481	Will Maker 4.0	34
Peachtree Software		
2594	At Once	189
4138	Crystal Accounting	39
2595	Insight Expert Accounts Payable	295
2596	Insight Expert Accounts Receivable	295
Reality Technologies		
3769	WealthBuilder Mac	94

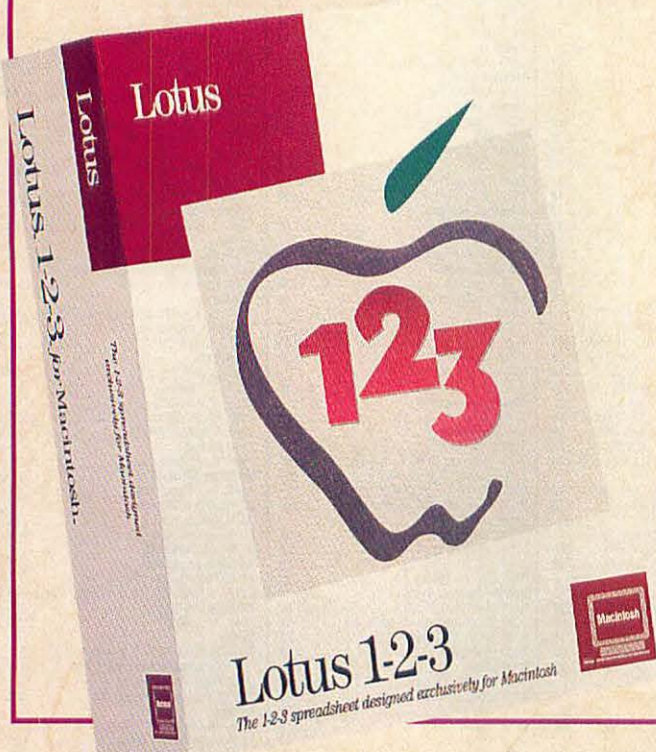
SKU#	Description	Price
Shogkeeper Publishing		
4599	Bill-It	114
4111	Shogkeeper Mac	249
Sitnyne/Bloc		
3986	Accountant Inc. 2.1	338
Survivor Software		
2814	InvoicIt	48
1582	MacMoney 3.5	58
Teleware Incorporated		
3535	M.Y.O.B. 2.0	138
The Software Toolworks		
3464	Dollars And Cents 5.0 Sense	62
Timeslips		
2512	Timeslips III 2.0	194
BOOKS		
Addison-Wesley		
0250	System 7 Revealed	18
1585	Inside Macintosh, Vol. 1	18
1586	Inside Macintosh, Vol. 2	18
1587	Inside Macintosh, Vol. 3	18
1588	Inside Macintosh, Vol. 4	18
1629	Inside Macintosh, Vol. 5	18
0249	Inside Macintosh, Vol. 6	27
1969	Inside Macintosh, X-Ref	18
3200	Mac Programming Primer Vol.2	21
4177	Macintosh Prog Primer Vol. 1	21
2473	Macintosh Programming Secrets	19
2884	Programmers Online Companion 2	35
Bentley-Double Day-Dell		
1495	Hypercard Handbook 2.0	21
2439	Mastering Winz	17
Compuserve		
0813	Compuserve Almanac	10
Electronic Arts		
4303	Sim Earth Strategy Guide	18
Goldstein & Blair		
3516	Mac Bible + What Do I Do + Sof	29
4393	Mac Bible Guide To Filemaker Pro	11
0875	Mac Bible Guide To System 7	8
0815	Macintosh Bible - What Do I Do	24
3814	Macintosh Bible 3rd Edition	18
Harcourt Collins Publisher		
4068	Kawasaki's Selling The Dream	18
Microsoft Press		
4099	Apple Mac 4th Edition	19
4097	DTP By Design-Pagemaker	18
4102	Get Started W/ Microsoft Word	15
4101	Getting Started W/ Apple Mac	15
4108	Macintosh C Programming Primer	17
4104	Macintosh Excel 3.0 Companion	15
4103	Object Oriented Prog Think Pas	25
4100	Works For The Macintosh	18
Redtag		
4641	October/December Mac Registry	15
Vanessa Press, Inc.		
4238	The System 7 Book	21
CABLES		
C Enterprises		
1081	Abt Box Din-8 W/ 1 Cable	32
1082	Abt Box Din-8 W/ 1 Cable	62
0864	Cable Din-8 To Imagewriter II 15'	32
0097	Din-9 To Imagewriter 2 Cable 6'	18
0098	Din-9 To Imagewriter 2 Cable 20'	32
0866	Din-8 - Imagewriter 2 Cable 6'	18
0868	Din-8 To Imagewriter 2 Cable 15'	14
0090	Mac 512K To Modem D9M/D25M 6'	18
0094	Mac Plus SW/1 Modem Cable 6'	18
2145	SCSI Cable M25-M25 6'	12
0667	SCSI Cable M25-M25 18'	25
1917	SCSI Cable M25-M25 6'	34
1085	SCSI Cable M25-M25 18'	25
2461	SCSI Cable M25-M25 6'	29
0856	SCSI Terminator	25
3360	Mac II Monitor Cable Ext. Kit	32
3359	Xtra Long ADB Keyboard Cable	24
Mac Tech		
3131	Mac II Ext Cable Kit	10
Orion		
2553	Grappler 9 Pin (C/Mac/Gs)	91
1030	Grappler Mac Lx	70
3015	Grappler Mac Lx	109
3014	Grappler Spooler	46
CD ROM DRIVES		
4301	CDR 73 W/General Ref CDr7M1	739
4133	NEC CDR-36 W/General Ref	499
0077	NEC CDR-36/Type Gall. CD-Tkm1	475
0079	NEC CDR-73 Drive	659
PLI		
3591	PLI CD Rom Drive	699
4237	PLI CD Rom Drive 220V	699
Toshiba		
3536	CD Rom Drive Xn-3201A Toshiba	795
CD ROM TITLES		
Activation		
3493	Cosmic Csmo CD ROM	45
2541	Manhole CD ROM	37
Bureau Of Electronics		
4468	Greatest Book	159
4467	Monarch Notes	219
4345	Pioneer Board	219
4469	US History On CD ROM	219
Mediatech		
3777	con Factory 1.1	44
3775	Script Library 2.0	56
Microsoft Corporation		
3233	Microsoft Office CD ROM	598
Quantum Leap Technologies		
0150	CD7	49
0152	Giga-ROM	98
0151	Macademic Vol. 1	73
Saltstream International Inc.		
4665	HyperIt 1	118
3469	Hypernet II Relational	239
Sunshine		
3431	Visual Delights CD ROM	209
Tactile Software		
4219	Tactile Multimedia CD-ROM	149
The Software Toolworks		
0515	Groliers Illustrated Ency	239
0516	Xiphias Timetable Of History	79
Wayzata Technology Inc.		
3506	All Of Mac Tutor CD ROM	155
3510	Baseball Guide And Reg CD ROM	155
3503	CD Funhouse	39
4043	EPS Professional	39
0472	Front Page News	89

SKU#	Description	Price
4565	GAIA Environmental Resources	149
3512	Gam (Public Domain) CD ROM	75
0242	Korean War	75
0025	Middle East Diary	89
4564	Photobank Volume 1	114
3543	Quick Art CD ROM	174
3505	Seals Of The US Govt. CD ROM	55
4771	Terrorist Group Profile V3.09	49
3509	The CIA World Factbook CD	78
3508	The USA Factbook CD Rom	85
0243	U.S. Presidents	25
3511	Vietnam Remembered CD Rom	78
4564	Washington Times And Insight	94
CHARTING SOFTWARE		
Delta Point		
3231	Deltagraph 1.5	124
CLIP ART		
3G Graphics		
3192	Images W/Impact - Accents And	64
2085	Images W/Impact - Business 1	64
1617	Images W/Impact - Graphics & S	49
0421	Images W/Impact - People 1	94
Adobe Systems Inc.		
2431	Smart Art 1	64
2620	Smart Art 2	58
2621	Smart Art 3	64
3131	Smart Art 4	58
Artisan		
4652	Dimensions Vol. 1	69
4653	Dimensions Vol. 2	69
4654	Dimensions Vol. 3	69
4655	Natural Images Vol. 1	69
4656	Natural Images Vol. 2	69
4657	Potpourri Vol. 1	69
4658	Full Page Images EPS Library	349
4659	Full Page Images CD ROM	349
4660	Backgrounds for Multimedia	169
Dream Maker Software		
3998	Captures Vol. 1 Business	67
3999	Captures Vol. 2 Business	67
4000	Captures Vol. 3 Sports	67
4282	Vol. 4: World Flags	67
Hubbick Software		
1266	Watpant Animals Vol. 5&6	56
1100	Watpant Classic Vol. 1&2	56
1879	Watpant Industrial Vol. 11&12	56
1581	Watpant Island Life Vol. 15&16	56
1880	Watpant Old Earth Vol. 13&14	56
1878	Watpant Printer's Vol. 9&10	56
1868	Watpant Publishing Vol. 3&4	56
1870	Watpant Special Occ Vol. 7&8	56
1872	Watpant The People Vol. 17&18	56
Foundation Publishing		
1394	Comic People Vol. 1 - Office	20
3227	Comic People Vol. 2 - Kids Stuff	20
Microcam Software		
4356	Map Art - EPS	89
4357	Map Art - Macpaint	89
4355	Map Art - Pict	89
NEC Home Electronics		
0085	Clip Art 3-D C3D00M01	245
0081	Image Gallery #C3D001	245
0082	Photo Gallery #C3D001	245
Online Arts		
0178	Business Images (Online Arts)	79
0068	Cartoon	14
3334	Click Art Business Cartoons	31
1052	Click Art Business Images	31
3460	Click Art Christian Images	31
0754	Click Art Holidays	31
0749	Click Art Personal Graphics	31
3606	Click Art EPS Animals And Nature	82
0456	Click Art EPS Sports And Games	82
0455	Click Art EPS Symbols And Indus	82
0457	Click Art Publications	82
3459	EPS Business Art	82

Description	Price	SKU# Description	Price	SKU# Description	Price	SKU# Description	Price
Macros For Excel 2.2	49	4675 King's Quest V	34	3438 Font 124 ITC Avant Garde Goth	119	2397 Font 72 Caslon Open Face	60
What's New For Excel	49	4676 Space Quest III	34	3439 Font 125 Stemple Schriener	239	2398 Font 73 Futura	239
And Schuster	49	4677 Space Quest IV	34	3440 Font 126 Trade Gothic	239	2399 Font 74 Linotype Centennial	239
Typing Tutor IV	24	4678 Rise of the Dragon	34	3441 Font 127 Trade Gothic Cond	239	2400 Font 75 Temple Garamond	119
ware Tools	49	4679 Heart of China (released 12/91)	34	3442 Font 128 Raleigh	239	2401 Font 76 Weiss	119
ocu-Weather	49	4680 Thaxder I	19	3443 Font 129 Minister	239	2402 Font 77 Garamond 3	119
avis Braun Teaches Typing	31	4681 Leisure Suit Larry 5	34	2338 Font 13 Helv Lt & Helv Black	119	2403 Font 78 U News, Comm. P/Uln	93
Atlas	49	4682 Hoyle I	19	3444 Font 130 Eurostyle Condensed	119	2404 Font 79 Avenir 1	177
	49	4683 Hoyle II	19	3445 Font 131 ITC W/deman	239	2405 Font 80 Avenir 2	177
ar	57	Shodan	27	3446 Font 132 ITC Quorum	119	2517 Font 81 Walbaum	119
Core Improvement S.A.T.	39	2527 Leprechaun	27	3447 Font 133 Caxton	119	2407 Font 82 Antique Olive	119
ic	39	Silicon Beach	32	3448 Font 134 Syntax	119	2568 Font 83 Life	93
igebra	10	1376 Beyond Dark Castle	32	3449 Font 135 Doric Maximus	93	2570 Font 85 Gothic 13 & Tempo	93
hythm	39	0669 Dark Castle	35	3450 Font 136 Shelley Allegro Scr	93	2571 Font 86 Cochlin	119
alculus 4.0 Workbook	10	Softstream International Inc.	31	3451 Font 137 Neuzet	93	2406 Font 87 Hc Bauhaus	119
icrete Mathematics	39	0067 22nd Street Whist Tutor	31	3385 Font 138 Versailles	239	2572 Font 88 Garamond	119
re Calculus / Trigonometry	39	4651 Classic Trilogy-Gift Edition	39	3386 Font 139 ITC Garamond Cond	239	2573 Font 89 Hirosgie	239
re Calculus Workbook	39	1333 Cribbage Tutor	32	2339 Font 140 ITC Cheltenham 2	119	2334 Font 9 ITC Garamond	119
robability Theory	39	4602 Family Card Games	49	3387 Font 141 ITC Century	239	2574 Font 90 A Booklin, F. Franktur	93
ue Basic Calculus 4.0	39	0255 Mac Rummy	32	3389 Font 142 ITC Century Condensed	239	2575 Font 91 Dom Casual	93
nestat	39	0261 Solitaire DA	23	3390 Font 143 Minion	239	2576 Font 92 Post Antiqua	93
y Software	39	Spectrum Holyboly	29	3391 Font 144 Minion Xprt Coll.	177	2577 Font 93 Folio	119
teguard	39	3809 Faces... Tris III	29	3706 Font 145 Times New Roman	119	2578 Font 94 Linoscript & Linotext	93
an Electronic Publishing	109	1605 Falcon 2.2	34	3707 Font 146 ITC Bookman 2	119	2579 Font 95 Vag Rounded	119
adible Greek	109	1622 Solitaire Royale Mac	24	3708 Font 147 Saffel Roundhand	93	2667 Font 96 Akzidenz Grotesk	119
adible Hebrew	109	1980 Tetris (B&W And Color)	23	3709 Font 148 Simocini Garamond	93	2668 Font 97 Impressum	93
adible King James Version	78	3808 Vette Mac	32	3710 Font 149 Garamond Display 2	119	2669 Font 98 Bauer Bodoni	119
adible New Int'l Version	78	3110 Welltris (B&W And Color)	21	2340 Font 15 Trump Medieval	119	2670 Font 99 New Aster	239
adible New Rev. Standard Ver.	78	Spinnaker	27	3711 Font 150 ITC Garamond 2	119	TOC Ant Plus Pack	239
INMENT	19	1916 Sargon IV	24	3712 Font 151 Rockwell	177	4025 TOC Font Family Group	255
Software	19	4238 Oceanic Tsunami	24	3713 Font 152 Gill Sans	177	4016 TOC Font Package 1	68
Font Class Leader Board 4.0	19	Strategic Simulations Inc.	39	3714 Font 153 Serpentine	177	4017 TOC Font Package 2	68
a	22	4304 Ad&D Secret Of The Silver Blades	39	3715 Font 154 Lucida Math	93	4018 TOC Font Package 3	119
astroack	34	2727 Ad&D: Pool Of Radiance	32	3716 Font 155 European Bord. Pl.	119	4019 TOC Font Package 4	177
rand Prix Circuit	34	3849 Curse Of The Azure Bonds Ad&D	38	3717 Font 156 Bundesbah Pl	119	4020 TOC Font Package 5	239
ack Nicklaus Greatest 18 Mac	25	Strategic Studies Group	28	3718 Font 157 ITC Caslon 224	239	4026 TOC Remaining 6 Fonts	183
lean 18 Ultimate Golf	29	3008 Halls Of Montezuma	28	3719 Font 158 Mathematical Pl	177	4015 TOC Single Type Face	35
stratego	29	2737 Panzer Battles	28	3720 Font 159 Leawood	239	4021 TOC Specials	49
in	42	The Software Tools	32	2341 Font 160 Wood Type 2	119	4022 TOC Typaset 1 Or 2	64
smic Csmo	25	4490 Chessmaster 3000	25	3721 Font 161 Bamba	119	4023 TOC Typaset 3	115
esley	10	2728 Cribbage King/King King	25	2085 Font 162 Gill Sans 2	93	3950 Type On Call CD-Rom	58
friendship Of The Ring	10	2285 Hunt For Red October	31	3865 Font 163 Rockwell 2	93	4212 Type Sets For Busin-Invt&Awar	94
hadows Of Mordor	10	2288 Life And Death	31	3866 Font 164 Galya	177	4213 Type Sets For Busin-Serds&Grp	94
on Crack Of Doom	10	3597 Army	33	3867 Font 165 ITC Zapf Chancery Fam	177	4214 Type Sets For Business Ltrs	94
orld Builder	54	3600 Harpoon	39	3868 Font 166 Usherwood	239	4215 Type Sets For Busin-Overhd&Sld	94
nd	25	0304 Harpoon Battle Set #2	22	3869 Font 168 Univers Extended	239	4338 1(4-5 Wgt Vol) 1(8-Wgt Vol) 1 Sd	349
ncient Art Of War	25	0306 Harpoon Battle Set #3	22	3870 Font 169 Olympian	119	4339 1(4-5 Wgt Vol) 1(6-7 Wgt Vol) 1 Sd	349
ncient Art Of War At Sea	25	0308 Harpoon Scenario Editor	28	2342 Font 170 ITC Galliard	119	4402 1(6-7 Wgt Vol) 1(8- Wgt Vol) 1 Sd	349
aymaker Football	28	2888 Sands Of Fire	32	3871 Font 171 ITC Cushing	239	4337 2(4-5 Wgt Vol) 1 Studio Vol	328
obysport	34	Toyogo	84	3872 Font 172 Saxon Primary	30	4403 2(6-7 Wgt Vol) 1 Studio Vol	349
huffpuff Cafe	23	4494 Nemesis Deluxe Toolkit 5.0	84	3873 Font 173 ITC Fentice	239	4404 2(8+ Wgt Vol) 1 Studio Vol	449
im Ant	29	4495 Nemesis Go Jr 5.0	20	3952 Font 174 ITC Cheltenham Cond.	239	0326 Agla Type On Cd Rom	61
im Earth Planet Simulator	39	2893 Nemesis Josaki Genius	26	3953 Font 175 Helvetica Rounded	177	0381 Agla Type W/ TXM-3301 CD Drive	689
im City 1.2 B&W	28	0191 Nemesis Jr	20	3954 Font 176 Din Schriften	119	4352 Font Access Codes (12 Fonts)	249
im City Color Supreme Mac II	46	4492 Nemesis Scribbler 5.0	35	3955 Font 177 Spartan Classified	93	streamline Inc.	58
here In Europe Is Carmen S7	28	Varage Mastertronic	23	3956 Font 178 Benguet Gothic	93	0395 Font Pack 1	239
here In The U.S.A. Is Carmen S7	28	0254 Scribble	23	3957 Font 179 Times Sombold	93	0397 Font Pack 2	58
here In Time Is Carmen S7	28	Visiography Software	38	2343 Font 18 ITC New Baskerville	119	4010 Font Pack 3	93
here In Time Is Carmen S7	28	3112 Synchronicity	38	3958 Font 180 Adobe Caslon	177	4011 Font Pack 4	93
errari Grand Prix	35	Xor	32	3959 Font 182 Neue Helvetica Ext. 1	119	Branderbund	127
51 Mustang Flight Simulator	39	1813 Lunar Rescue	32	3960 Font 184 Neue Helvetica Ext. 3	119	4347 Typesetler 2.0 With Atm	127
Software Products	39	3625 Mac Ski	37	3961 Font 185 Shannon	119	Casady And Greene	99
peration Desert Storm	27	0650 Macgolf	33	3962 Font 186 Bembo 2	119	0315 Fluent Laser Fonts Library 4.0	99
And Greene	29	1984 Macgolf Classic	49	3963 Font 187 Garth Graphic	239	Design Science, Incorporated	99
qua Bloopers	29	0895 NFL Challenge	53	3964 Font 189 Helvetica Neue Cond 2	177	3559 Design Science Math Type	99
ystal Quest 2.2	29	2069 Road Racer	26	3965 Font 190 Korinna	119	3560 Design Science Para Font	49
ystal Quest 2.2T w/Critter Editor	44	2909 Taskmaker	26	3966 Font 191 Helvetica Neue Cond 3	119	Dream Maker Software	26
ide Bundle	59	FLOPPY DISK DRIVES	195	0342 Font 193 Garamond 3 Old Style	119	3995 Mac Gallery - MacPaint Format	26
ision V4.0	28	Applied Engineering	228	0239 Font 195 Type Before Underline	183	3996 Mac Gallery Hypercard Format	26
ission Starlight	28	3671 Ae 3.5 - 800K Disk Drive	195	0209 Font 197 Sabon Small Caps & 0	119	1342 World Class Fonts Vol. 15.2	56
ly Shadow	28	3672 Ae 3.5 - HD 1.44Mb Disk Drive	228	2556 Font 199 Bauer Bodoni Small Caps	119	1882 World Class Fonts Vol. 35.4	56
asino Master B & W	44	3687 PLI Superfloppy 1.4 (1.4/800)	448	2327 Font 2 ITC Bookman	119	1883 World Class Fonts Vol. 5.6	56
asino Master Deluxe Color	44	0298 PLI Turbofloppy 1.4 (1.4 Only)	308	2345 Font 20 Goudy Old Style	119	2319 World Class Fonts Vol. 75.8	56
as Software	37	Font Utilities	308	2346 Font 21 Sonata	62	Letraset Graphic Design	366
acward Ho!	37	Adobe Systems	109	2347 Font 22 Century Old Style	93	3218 Fontstudio	366
trategic Conquest	37	2870 Adobe Plus Pac For Type Mgr.	58	2348 Font 23 ITC Franklin Gothic	177	NEC Home Electronics	245
tic Arts	31	3497 Adobe Type Manager 2.0	39	2349 Font 24 ITC Cheltenham	119	0080 Type Gallery Ps #Cdsmpo2	49
huck Yeager's Advanced Flight	31	3280 Adobe Type Reunion	39	2351 Font 25 Park Avenue	62	Tactic Software	2859
rossword Magic	32	Altsys	94	2352 Font 26 Bodoni	119	2859 Artifacts Pak	49
arpoon Battle Book	14	Altsys Eps Exchange	94	2353 Font 28 Prestige Elite	93	FOREIGN LANGUAGE	119
arpoon Battle Set #4 Rel 1091	24	Ares Software Corporation	62	2354 Font 29 Orator	119	Hyperplot Survival Manual	39
arpoon Challenger Pak	59	0078 Fontmonger	49	2355 Font 30 Zapf Dights & Chancery	93	4234 French Survival	39
arvelous Mac Games	34	Image Club	24	2356 Font 30 New Gothic	119	4236 German Survival Manual	39
ad And Magic I & II	34	3202 Evolution	49	2357 Font 31 ITC Tiffany	177	4237 Hyperplot French Pronunciation	34
ack Tour Golf	26	Adobe Systems Inc.	14790	2358 Font 32 Cooper Hobo & Brooms	93	4242 Hyperplot French Tense Tutor	41
ack N Fire	26	4329 Adobe Font Folio 1-150	119	2359 Font 33 Stencil, Hobo & Brooms	93	3743 Hyperplot French Verb Tutor	38
artlight II	33	3156 Adobe Font Folio Gd Rom 1-150	13915	2360 Font 34 Aachen & Revue & U Rom	119	3741 Hyperplot French Word Torture	34
es/Software Heaven	29	3359 Font 161 Adobe Calisto Expert	177	2361 Font 35 Carta	60	3746 Hyperplot German Pronunciation	34
es/Software Heaven	29	3361 Font 163 Neue Helvetica Ext. 2	177	2362 Font 36 Lucinda	239	3747 Hyperplot German Verb Tutor	38
ave	35	3363 Font 168 Helvetica Neue Cond 1	177	2363 Font 37 Unvers	119	3745 Hyperplot German Word Torture	34
umbezzle-Color	39	3234 Adobe Collectors Ed #1 S&B	79	2364 Font 38 Universe Condensed	177	3733 Hyperplot Intro To Russian	28
esign	32	3235 Adobe Collectors Ed #2 P&T	139	2365 Font 39 Futura Light	177	3748 Hyperplot Italian Word Torture	34
in Three	32	3092 Adobe Type Align	61	2366 Font 40 Stone Serif	177	3750 Hyperplot Japanese Easy Kana	128
urwin's Dilemma V2.0	44	3156 Font 118 Bodoni II	119	2367 Font 41 Stone Sans Serif	177	3749 Hyperplot Japanese KanjiMaster	98
untel Beach	44	3210 Adobe Type Set 1	64	2368 Font 42 Stone Informal	177	3892 Hyperplot Learn French CD Rom	59
swamp Gas	32	3211 Adobe Type Set 2	64	2369 Font 43 Corona	93	3893 Hyperplot Learn Spanish CD Rom	59
eserve	31	3491 Adobe Type Set 3	124	2370 Font 44 Eurostyle	177	3735 Hyperplot Russian Noun Tutor	58
yperblast	24	2326 Font 1 Palatino	119	2371 Font 46 Futura	177	3734 Hyperplot Russian Verbal Aspec	41
hackle Chess	29	2335 Font 10 ITC American Typewriter	119	2372 Font 47 Futura Condensed	239	3732 Hyperplot Russian Word Torture	34
heckmate	34	2671 Font 100 Adobe Garamond	177	2373 Font 48 Lucinda Sans	239	3740 Hyperplot Spanish Pronunciation	34
im Games	33	2672 Font 101 Adobe Gar Xprt Collie	119	2374 Font 49 Memphis	239	3739 Hyperplot Spanish Tense Tutor	41
ndiana Jones - The Last Crusade	33	2673 Font 102 Candida	93	2375 Font 5 New Century Schoolbook	119	3738 Hyperplot Spanish Verb Tutor	38
oom	16	2674 Font 103 Franklin Gpht No. 2	93	2376 Font 50 Helvetica Compressed	93	3737 Hyperplot Spanish Word Torture	34
ique Dream	31	2675 Font 104 Utopia	177	2377 Font 51 Italia	93	4231 Learn To Speak English From CD	59
ague Sports	37	2676 Font 105 Utopia Xprt Collect.	119	2378 Font 52 Belva	119	4232 Learn To Speak Spanish From CD	59
ic League Baseball II	37	2619 Font 106 ITC Berkeley Oldstyle	239	2379 Font 53 Caslon 540	119	4235 Spanish Survival Manual	39
the Manager's Challenge	37	3145 Font 107 Antique Olive II	119	2380 Font 54 Goudy Xtra Eld & Hylic	93	Penton Overseas	35
oss	32	3147 Font 108 Papyrus/Ultima	93	2381 Font 55 Jenson Text 55 & 75	119	2837 Vocablearn French 1	35
ratasi For Mac	34	2336 Font 11 ITC Benguait/Fritz Qua	119	2382 Font 56 ITC Eras	93	2838 Vocablearn French 2	35
ailroad Tycoon	39	3148 Font 110 Nuptia/Cascade/Medi	93	2383 Font 57 ITC Kabel	119	2925 Vocablearn German 2	35
it Corporation	39	3149 Font 111 Bauer Bodoni II	119	2384 Font 58 Ocr-A, Ocr-B, Micr	93	2839 Vocablearn German 3	35
ight Simulator 4.0 Mac	39	3150 Font 112 Meridians	239	2385 Font 59 Helvetica 1	119	2928 Vocablearn Italian 1	35
um Tremendum	31	3151 Font 113 Copperplate Gothic	177	2386 Font 60 Helvetica 2	119	2840 Vocablearn Japanese 1	35
Meriary's Revenge	31	3152 Font 114 ITC Novaresa	177	2387 Font 61 Helvetica 3	177	2929 Vocablearn Japanese 2	35
Moebius	24	3153 Font 115 Kunstler Script	93	2388 Font 62 Times Ten	93	2838 Vocablearn Spanish 1	35
ogre	24	3154 Font 116 Industria	119	2389 Font 63 Kaufman	93	2927 Vocablearn Spanish 2	35
pace Rogue	39	3155 Font 117 ITC Souvenir II	119	2390 Font 64 Clarendon	93	Gift Ideas	12
in International	28	2337 Font 119 Russell Square	119	2391 Font 65 Pencil	93	4556 HeadCrashers/Pillowcases (Two)	12
itadel - Secrets (The Book)	14	3156 Font 120 Gysela	93	2392 Font 66 New Celestia	239	4557 Headsheets-Queen	32
itadel W/Secrets (The Book)	37	3157 Font 121 Charlemagne/Trajan	119	2393 Font 67 ITC Charter	239	4558 Headsheets-King	26
		3158 Font 122 Lithos	119	2394 Font 68 Americana	239	HARD DRIVE UTILITIES AND ANTI-VIRUS	
		3159 Font 123 Chtnwood/Pndrosa/rion	119	2395 Font 69 ITC Souvenir	119	Casa Blanca Works, Inc	44
		3160 Font 124 Teton	119	2396 Font 70 Century Expanded	93	4472 Universal System 7 Formatter	44
		3161 Font 125 Teton	119	2397 Font 71 Serifa	119	Fifth Generation	117
						4413 Disklock 2.1	117
						FWB, Inc	139
						0555 Hard Disk Toolkit	139

SKU# Description	Price	SKU# Description	Price	SKU# Description	Price	SKU# Description	Price
Symantec		0007 Mac Port Sram 1Mb	204	1057 Courier Hst Std V.42	675	Sigma Designs	
4541 Great Works - Norton Bundle	199	3586 SIMMs 1Mb 11x	49	4610 World Port 2400 MNP5	249	3854 L View Multi-Mode For Ixxx	1299
4040 Great Works V.1.0 Comp. Upgrade	98	3579 SIMMs 4X1Mb Fx 80Ns	169	4611 World Port 9600 v.32	549	3860 Colormax 24 Monitor	4350
T Maker		3585 SIMMs 4X4Mb Fx	759	4626 World Port Fax Data Modem	369	0219 Multi-Mode LC	1475
0042 T/Maker Smart Bundle	149	3976 SIMMs Lc (Two 4Mb Simms)	349	MONITOR FILTERS		3853 Multi-Mode SE-30/Si	1475
JOYSTICKS		3428 2 One Mb SIMMs (80Ns) Samsung	94	4132 Pagview 15" 220V Monitor	1750	4131 Pagview 15" Monitor	515
Advanced Gravels		4609 I/O Cache Card	189	3356 "Antiglare Filter 13" Apple RGB"	82	3855 Pagview Gs I/O/Si Monitor	649
2740 Mousestick Joystick 512 & Plus	58	4608 LC Video Ram	89	4049 Polarizing Filter (Beige)	32	4130 Pagview M2/Xc Card	225
2741 Mousestick ADB	58	3584 SIMMs 4X4Mb '020	799	MONITORS AND VIDEO CARDS		3856 Pagview SE Monitor	850
Kraft		3583 SIMMs 4X4Mb '030	639	Digital Vision		3857 Pagview SE30 Monitor	850
1990 Kraft KM330 Joystick Mac	44	MICE AND TRACKBALLS		3277 Computer Eyes - Color	399	3858 Silverview Mac II Monitor	1850
0941 Kraft QuickStick Mac 3 Button	35	Abalon Technology Corp		3278 Computereyes - BW	104	MOUSE PADS	
KEYBOARDS		1507 Pro Point ADB (SE & II)	79	E-Machines		Polymark Trac Company	
Datadesk		Advanced Gravels		4455 TVX/S & T19/S1 Video Card	920	4305 Carpet Cushion Mousepad	14
1584 Mac 101E Keyboard - New	128	0255 SuperMouse	63	4105 Color Page E16 16" Monitor	1140	Precision Line	
4318 Mac 101E Keyboard W/Quickkeys	148	2935 Felix	116	4479 Color Page T16 16" Monitor	1775	1306 Mouse Pad - Black (8-1/4" x 9-1/4")	6
3326 Switchboard	153	Appoint		4480 Doublecolor 8Bit	350	1305 Mouse Pad - Blue (8-1/4" x 9-1/4")	6
Keytronics		4117 Appoint Thumbelina Mouse Pen	69	4151 Doublecolor LC/8Bit	399	1307 Mouse Pad - Gray (8-1/4" x 9-1/4")	6
2813 Mac Pro Keyboard 105 Plus	128	Costar		0184 E Machines T19 19" Monitor	2975	1308 Mouse Pad - Red (8-1/4" x 9-1/4")	6
0517 Trak Pro Keyboard	299	0523 Stingray - Black	88	4181 E Machines TX 16" Monitor	1775	MULTIMEDIA	
Silicon Sports		0524 Stingray - Platinum	88	4482 Futura EX/24Bit	565	Adobe	
4090 Silicon Sports Wrist Pad Blue	13	Curtis		4152 Futura MX/24Bit	1400	4670 Premier	329
4092 Silicon Sports Wrist Pad Grey	13	0454 Curtis MVP Mouse ADB V1.0	88	4188 Futura SX/24Bit	1059	Articulate Systems Inc.	
4091 Silicon Sports Wrist Pad Mauve	13	Datadesk		4189 Futura SX/8Bit	699	3933 Voice Link	180
4079 Silicon Sports Wristpad Black	13	3780 Switchboard Switch Track Ball	97	4483 Futura SX/8Bit	699	3932 Voice Navigator II	58
4089 Silicon Sports Wristpad Red	13	Everex Systems		3915 T16 8-Bit Color Sys Mac II	1995	0576 Voice Waves Plus	44
LABELS AND MAILING LIST SOFTWARE		4094 Everex Silhouette Trackball	81	3820 T16X12 Color Sys For Mac II	2990	Casady And Greene	
Avery Labels		Kensington		4025 T16 24Bit Color Sys Mac II	3990	2875 Ams 1-10 Users	58
3552 Avery Mac Label Pro - Software	47	4417 Custom Track Ball-Purple 62374	10	4487 TX/2 & T19/24 Video Card	1775	2873 Ams Single User	58
3031 Custom Color Disk Label 80	6	4420 Custom Track Ball-Black 62371	10	4434 TX/8 & T19/8 Video Card	920	Cayman Systems	
3023 Labels Dot Matrix (250) #4241	6	4422 Custom Track Ball-Blue 62372	10	4435 TX/SE30 & T19/SE30 Video Card	920	0181 Gator Card E/I (11 Series) En	12
3025 Laser Disk Labels (630)	28	4423 Custom Track Ball-Red 62372	10	2914 TX16 24-Bit Color Sys Mac II	3695	3120 Gator Mail Q (10 Users)	49
3024 Laser Transparencies (Qty 50)	22	1292 Turbo Mouse (512K & Plus)	107	3921 TX16 8-Bit Color Sys Mac IISI	2699	4155 Gator Print Cs	45
Kiwi Software		1411 Turbo Mouse ADB	107	2144 TX16 8-Bit Color Sys Se/30	2730	CE Software	
2917 Kiwi envelopes	32	Logitech		Generation Systems		2689 In/Out (1-10 User)	2689
Satori		4258 Logitech Mouseman Mac	76	4145 Generation System Full Page Display	599	4169 Quickmail 2.5 (10 User)	282
3013 Bulk Mailer 3.2.3	74	0550 Logitech Trackman For Mac	84	4558 14" Color Monitor	599	4171 Quickmail 2.5 (50 User)	1795
1135 Bulk Mailer Plus 3.2.3	195	Micro Touch Systems		0552 Gen. Sys. 24 Bit Color Display	3299	Dayna Communications Inc	
Synex		3142 Unmouse	159	4146 Gen. Sys. Full Page Display SE	599	3546 Dayna EtherPrint /Thick and Thin	448
3142 Macenvelope 5.1	56	Microspeed Inc.		4147 Gen. Sys. Full Page Display LC	599	0003 Dayna EtherPrint 10BaseT	55
2805 Macenvelope Plus 2.0	158	3306 Macrac Trackball 512/Plus	60	4148 Gen. Sys. Full Page Display Classic	599	0806 DaynaPORT E/LC	349
Vertical Solutions		3305 Macrac Trackball ADB	60	4149 Gen. Sys. Full Page Display II	599	3471 Media Tracs Multimedia Pack	349
3371 Fast Envelope 1.0	42	4172 Micro Trac Mini Trackball	59	4146 Gen. Sys. Full Page Display SE	599	3473 Mac Recorder Voice Digitizer	99
3370 Fast Label 2.0	42	Mouse Systems Corp.		4147 Gen. Sys. Full Page Display LC	599	2584 MacRecorder 2.0	158
Williams And Macias		0208 A3 Mouse 3 Button A/Ux Mouse	89	4148 Gen. Sys. Full Page Display II	599	4170 Media Tracs Multimedia	188
2420 Sticky Business	56	3629 Little Mouse A+ (512/Plus)	73	4149 Gen. Sys. Full Page Display LC	599	3472 Media Tracs Multimedia	318
3021 Sticky Business Plus	66	3630 Little Mouse For ADB	73	4147 Gen. Sys. Full Page Display LC	599	CD ROM	318
MAC TO HOST CONNECTIVITY		2308 Little Mouse For ADB(Fx Only)	74	Mass Microsystems		Gold Disk Software	
Argosy Software, Inc.		0252 Mouse Systems Trackball/ADB	67	018C Quick Image 24 Video	249	3974 Animation Works	120
4241 Run PC Network	278	MODEMS AND FAX		Frame Grabber	249	Keala Technologies Corporation	
4240 Run PC Remote	139	Abalon Technology Corp		Micron		3705 Keala Mac Vision Video Digitizer	414
3848 Software Bridge Macintosh	98	2987 Abaton 24/96 Faxmodem 110V	338	3094 Xceed 8 Bit SE/30 13/14"	268	2282 Macromind Accelerator	124
Cayman Systems		3186 Abaton 24/96 Faxmodem 220V	338	Radius		0639 Macromind Director V3.0	689
0533 Xgator (Single User)	349	2154 Abaton Interfax 12/48 Faxmodem	264	4437 Directcolor/Gx Interface	575	3651 Macromind Media Maker	495
Dalaviz		Applied Engineering		4515 Directcolor 24/Infrax 72Dpi	2999	0636 Macromind Three-D	1149
4438 MacLink & Pc 5.1 V/Cable	128	3981 Mac LC 24/96 Sendfax Modem	245	4516 Directcolor 24/Infrax Exp. Kit	2999	Motion Works	
3111 MacLink Transceiver V5.1	108	3981 Mac LC 24/96 Sendfax V.42Bis	265	4517 Directcolor 24/Infrax Interface	2460	Multi-Ad Services, Inc.	
Dayna Communications Inc		3670 Mac Portable W/Mnp 5 & Sendfax	295	4515 Directcolor/24 Interface	2460	0553 Multi-Ad Creator	455
3891 Dos Mounter 2.0	54	0340 Modem 2400 External	174	4517 Directcolor/8 Interface	1299	0554 Multi-Ad Creator	115
0230 DaynaFILE II 1.44 Mb 3.5	45	0341 Modem 2400 Internal	208	4514 Directcolor/5 Interface 72Dpi	1375	Olduvai	
2609 DaynaFILE 360K 5.25" Drive	445	3668 Modem 2400 Mnp 5 Internal	195	4517 Directcolor/Gx Interface Niso	575	3695 Olduvai Video Paint	278
2616 DaynaFILE Dual 1.2Mg/1.44Mg Dr	799	3667 Modem 2400 Mnp 5 Send Fax Ext	235	4518 Directcolor/Gx Interface Pal	575	Monster Group, Inc.	
2613 DaynaFILE Dual 360K/1.2Mg Dr	738	3669 Modem 2400 Mnp 5 Send Fax Int	269	4502 Full Page Display-Classical Interface	215	4643 Macscape Carry Case For Ms-1	21
2615 DaynaFILE Dual 360K/1.44Mg Dr	649	3666 Modem 2400 Mnp 5 External	195	4503 Full Page Display-SE Interface	215	Paracom	
0319 DaynaFILE II 1.2Mb	448	Best Data Products		4501 Full Page Display 15" Mono	650	3650 Filmmaker 2.0	428
0318 DaynaFILE II 360K 5.25	435	4243 Smart One 2400Xmac Modem	99	4430 Pivot-LC Upgrade Kit	290	Pixar	
Daystar Digital		Computer Peripherals		4498 Precision 8 Color Card G310	575	4063 CD Showplace/MacRenderman	439
2214 LT 200 PC LocalTalk Board	188	4272 VISA 9642Z (9600 Baud Modem)	419	4519 Precision Color Calibrator	515	4010 MacRenderman	399
2215 LT 200 Mac LocalTalk Board	295	0395 VISA 9642Z (9600 Baud Modem)	419	4520 Quickdial Graphics Engine	1084	0430 Showplace / MacRenderman	548
Fairfield Software		Cypress Research		4521 Quickdial Graphics Engine	286	Specular International	
3992 Clear Access	350	4585 Network Fax ProModem	799	4527 Radius 16MHz Xcel For SE	360	0815 Infini-D 3D Animator	647
Insignia Solutions		Datadesk		4526 Radius 16MHz Xcel For SE W/Fpu	499	Storm Technology	
3664 Access PC 1.1 Mac	61	1462 Hyper Dialer	34	4554 Radius 19" 2 Pg. Display Mono	999	4335 Picture Press 2.0	119
4541 Soft PC Universal V2.5	241	Dove Computer Corp		4489 Radius 19" Color Display	2995	Symmetry	
3982 Soft PC Classic Mac	125	3318 Dove Fax 24/96	294	4505 Radius 21" 2 Page Display Mono	1299	3993 Mariah	85
3282 Soft PC EGA/AT (Need 2506)	123	3514 Dove Fax Plus	358	4186 Radius 21" Color Monitor	3299	Tacile Software	
Orange Micro		Everex Systems		4525 Radius 25MHz Xcel For SE W/Fpu	940	2860 Sound Clips 1	48
1485 Mac 286 V3.0 (Single Board)	1078	5144 Emac 24/96 Fax & Data Modem	329	4528 Radius Full Page Display II Interface	430	2861 Sound Clips 2	48
3032 Mac 86 Co-Processor Card SE	265	2048 Emac Md 2400 Modem	175	4529 Radius Full Page Display II Interface	430	3626 Sound Clips 3	48
3562 Orange 386 16MHz	1678	Global Village Communications		4529 Radius Full Page Display II Interface	430	3627 Sound Clips 4	48
0059 Orange Micro 386 20MHz	1838	3583 Teleport Adb 2400 Mnp 5 Modem	128	4534 Radius GSC/Interface M	720	4221 Tactic Stereo Recorder	149
0230 Orange Peripherals Kit	149	0395 Teleport Fax 24/96	184	4538 Radius Impress II Software	135	MUSIC AND MIDI	
Pacer Software		Hayes		4536 Radius Pivot Display Color	1450	As Nova	
4473 PacerForum V1.0	349	0451 Hayes Personal Modem 2400	148	4539 Radius Pivot Display Mono	784	4773 Practica Musica 2.2	65
4163 PacerTerm	159	0452 Hayes V-Ultra 9600 Connect.Cbl	668	4520 Radius Pivot II Interface C	565	Bogus	
PLI		0386 Smartcom II 3.2	83	2021 Radius Pivot I/O Interface C	565	1973 Super Studio Session 2.0	64
4449 PLI DOS Floppy 5.25"	499	Logicode		4199 Radius Pivot I/O Interface C	565	Brøderbund	
Traveling Software		4644 Xeba 9600 Send/Receive	195	4202 Radius Pivot LC Interface M	275	1612 Jam Session	28
3975 Laptop Mac II 3.2	92	V.42 Bis Black		4198 Radius Pivot SE/30 Interface C	565	Coda	
Walker, Richer, Quinn		4674 Xeba 9600 Send/Receive	195	4203 Radius Pivot SE/30 Interface M	275	3127 Finale 2.6.1	548
0262 Reflection 3+	360	MATHEMATICS AND STATISTICS		4507 Radius Two Page Display II Interface	430	3128 Musicprose 2.1	298
Abacus Concepts		Abacus Concepts		Nubus M	430	Electronic Arts	
0070 MacSpin	168	Mac Tech Distributors		4506 Radius Two Page Display I/O Interface	430	0257 Deluxe Music Constr. Set 2.5	83
0032 Staview II	278	0028 Lexus 2400Bps Mini Modem	89	4509 Radius Two Page Display SE	430	Great Wave	
0066 Staview SE-Graphics	198	Microcom		4510 Radius Two Page Display SE	430	3187 Concertware + Midi V5.0	97
0071 Staview Student	83	3615 Microcom Mac Modem	654	4509 Radius Two Page Display SE/30	430	Imaja	
4317 Superanova	300	Practical Peripherals		4511 Radius Two Page Display/Pc-Iso	430	Mark Of The Unicorn, Inc	
Prescience		4035 Practical Modem 9600 Sa-Mac	669	4512 Radius Two Page Display/Pc-Mca	575	4429 Midi Time Piece	375
1382 Expressionist 2.07	70	Prometheus		4512 Radius Two Page Display/Pc-Mca	575	2500 Performer 3.61	375
3692 Theorist 1.1	258	4416 Prometheus 2400 Mini Plus	123	4512 Radius Two Page Display/Pc-Mca	575	0639 Professional Composer 2.3M	375
Strategic Mapping Inc.		4596 Promodem 2496 S/R Mini Fax	269	4512 Radius Two Page Display/Pc-Mca	575	Mibac	
2498 Exstatix 1.2	218	3311 Promodem Mnp 5 2400 II Intrl	245	4512 Radius Two Page Display/Pc-Mca	575	4284 Mibac Jazz Improvisation	79
Synogy Software		3312 Promodem 2400 Mini-M	118	4512 Radius Two Page Display/Pc-Mca	575	4283 Mibac Music Lessons	54
2006 Kaleidagraph 2.0	149	3314 Promodem 2400 Se Plus	245	4512 Radius Two Page Display/Pc-Mca	575	Opcode Systems Inc.	
Tree Star, Inc.		3608 Promodem 9600M Plus	599	4512 Radius Two Page Display/Pc-Mca	575	3937 E-Z Vision	99
3373 Flexigraphs 1.1	120	3313 Promodem Travel Modem	122	4512 Radius Two Page Display/Pc-Mca	575	3939 Midi Play	42
1357 Flexitrace	145	0062 Promodem Ultima	689	4512 Radius Two Page Display/Pc-Mca	575	3938 Midi Translator	42
3987 Flexitrace/Flexigraph Bundle	225	Reliays		4512 Radius Two Page Display/Pc-Mca	575	3939 The Book Of Midi	29
Wolfman Research, Inc.		0256 Reliays Telfax W/Autofax	869	4512 Radius Two Page Display/Pc-Mca	575	Passport Design	
4107 Mathematica Enhanced V2.0	789	Shiva		4512 Radius Two Page Display/Pc-Mca	575	3939 Audio Trax	159
4108 Mathematica V2.0 Standard	519	4491 Shiva Netmodem/E	1749	4512 Radius Two Page Display/Pc-Mca	575	0312 Desktop Music Creativity CD	164
MEMORY, COPROCESSORS AND SIMMS		10 BaseT/Thin		4512 Radius Two Page Display/Pc-Mca	575	0313 Encore	378
Applied Engineering		3251 Shiva Netmodem V.32 9600	1149	4512 Radius Two Page Display/Pc-Mca	575	0310 Hypermusic Midi Player	34
4120 Fast Math LC	139	1615 Shiva Netmodem V2400	338	4512 Radius Two Page Display/Pc-Mca	575	2828 Mastertracks Pro 4.5	314
3675 Mac RAM Portable 1Mb Sram	349	4129 Shiva Netmodem/E 10 Base T	1749	4512 Radius Two Page Display/Pc-Mca	575	1355 Midi Interface	79
3674 Mac RAM Portable W/1 Mb	395	Solutions		4512 Radius Two Page Display/Pc-Mca	575	2067 Note Writer II	349
3824 Mac RAM Classic 1Mb Upgr. Ae	118	4404 Faxgate & 3.0 W/S Pak Mailmake	249	4512 Radius Two Page Display/Pc-Mca	575	0311 Sound Apprentice	164
Dove Computer Corp		Supra Corporation		4512 Radius Two Page Display/Pc-Mca	575	3457 Sound Exciter	48
0963 MacSnap 524Kx (512Kx To 1Mb)	198	4026 Supra 2400 Plus Macpac	239	4512 Radius Two Page Display/Pc-Mca	575	0303 Trax 2.0	58
0964 MacSnap 524Kx 512Kx-1Mb	248	4351 Supra Fax Modem Plus	199	4512 Radius Two Page Display/Pc-Mca	575	Pix Music	
WCSGI		2003 Supra Modem 2400 Baud	89	4512 Radius Two Page Display/Pc-Mca	575	3453 Band-In-A-Box	57
3817 MacSnap 596Kx (512Kx To 4Mb)	390	3368 Supra Modem 2400 Macpac	138	4512 Radius Two Page Display/Pc-Mca	575	NETWORKING AND CONNECTIVITY	
Ergotron		0665 Supra Modem 2400 Plus	148	4512 Radius Two Page Display/Pc-Mca	575	Asante	
1277 Mouse Cleaner 360	9	Telabit		4512 Radius Two Page Display/Pc-Mca	575	3945 Asante 10T Mau	99
SIMMS		2554 T-2500 V.42 Rel 6.01 1900 Bps	999	4512 Radius Two Page Display/Pc-Mca	575	3885 Asante 10 Base T Hub	69
3936 2 One Mb SIMMs (100 Ns) Micron	84	U.S. Robotics		4512 Radius Two Page Display/Pc-Mca	575	0327 Asante En/Sc SCSI Ethernet	339
3936 IISI SIMM Module 2Mb (Qty 4)	389	3665 Courier Hst Dual Std V.42	995	4512 Radius Two Page Display/Pc-Mca	575	0819 Asante Macon + 30le MC	299
0014 LC SIMMs (Two 2Mb)	194			4512 Radius Two Page Display/Pc-Mca	575	0820 Asante Macon + 30le MC 64	259
0008 Mac Port 2Mb Sram	540			4512 Radius Two Page Display/Pc-Mca	575	4184 Asante Macon + 30le MC64	349
0009 Mac Port 3Mb Sram	639			4512 Radius Two Page Display/Pc-Mca	575		

Description	Price	SKU# Description	Price	SKU# Description	Price	SKU# Description	Price				
Shiva Netserver	274	Microtek		Lotus Corp		3389	MacSchedule V2.5	144	Microlytics		
Shiva Telebridge	406	4047 Microtek TrueLaser Drum	119	1518 Lotus 123 - Mac Comp Upgrade	89	3390	Micro Planning Software		1940	Gofor 2.0 For Mac	39
Shiva Hublet	299	4047 Microtek True Laser Printer	1399	0507 Lotus 123 Mac	339	349	Micro Planner Plus 6.X	349	Microscans Publishing		
Shiva		4080 Microtek TrueLaser Toner 2/Pk	39	0227 Microsoft Excel 3.0 - Mac	299	4123	Mastering Paper 10 User Pack	548	1946 Reflex	48	
Version Territory 25 User V.20	339	QMS		STANDS		4123	Mastering Paper 10 User Pack	548	3327 Rival	48	
ans		4584 Qms 410 Laser Printer	1999	Basic Needs Inc.		4123	Mastering Paper 10 User Pack	548	2005 Screen Gems	38	
Mail Maker 20 User Pack	438	Texas Instruments		0812 Monitor Stand For Hcx & Hcl	47	0119	Dynodex 2.0	71	Microplot		
Mailmaker 5 User Pack 1.1	99	4332 Apple Talk For MicroLaser	0	Costar		2922	Dynodex Instant Address Book	56	0818 Macpalette II	54	
igley Works		4096 TI PS 17 MicroLaser Printer	1300	3617 Costar Organizer Jr	78	3978	Dynodex Paper (300 Pages)	14	4326 Macpalette II		
Gracelan V.2.0 50 User	299	4313 TI PS 35 MicroLaser Printer	1699	Ergotron		3977	Dynopage	71	(Apple Talk Version)	204	
		PROGRAMMING		3840 Mac Tilt Classic	67	Power Up					
Topps 3.0 Network DOS 3.5	149	Digital		1274 Mac Tilt Platinum Plus	67	0115	Address Book Plus V2.0	62	Now Software, Inc.		
Topps 3.0 Network DOS 5.25	154	4017 E-HELP	262	1273 Mac Tilt SE	67	Westware Inc.		3522 Screen Locker	44		
Topps 3.0 Network Mac	186	High Performance Systems		Kensington		3897	Contact Ease	245	Olduvai		
Topps Flashbox Mac Din-8	118	3836 I Think	375	4427 Laserstand-Mac 62575	128	Zedcor, Inc.		2237 Multiclip 2.0	68		
Topps Flashcard (DOS)	149	Icom Simulations		2539 Mac II Stand (No Cables)	128	3455	Disk 3.03	228	On Technology		
Topps Flashcard (Micro Channel)	228	2525 Hypermon	58	3353 Macintosh II Monitor Stand	64	4074	Calc +	38	4308 Meeting Maker 5 User	314	
Topps Netprint 2.0	124	4128 Tmon Pro	149	3353 Macintosh IIc Monitor Stand	64	2895	Canopener 1.1	61	3198 On Location 1.02	74	
Topps Repeater	118	Mainstay		3353 Macintosh IIc Monitor Stand	64	3927	Cheshire 1.0	59	Ontrack		
Topps Teleconnector - DB-9	19	1207 V.I.P. (Visual Interactive Pro)	99	3425 Printer Muffler 80	43	Advanced Software		3222 Disk Manager Mac 2.23	35		
AL Drives		Microsoft Corporation		2975 Super Base	31	4534	In Touch V.1.1	42	Preferred Publishers		
International		2054 Microsoft Quick Basic 1.0	63	2976 Tilt Swivel For SE Or SE/30	21	3554	Screen Shot	30	3554 Screen Shot	30	
Core128Mb 3.5" MO	1699	Now Software, Inc.		3355 Universal Copy Stand	22	Psyntax Software		4268 CalenDar (DA)	24		
Core Optical Disk (RMC128-1)	89	2778 Prototyper 3.0	184	2977 Universal Printer Stand	15	Salient		3515 Disk Doubler 3.7	46		
Microsystems		Paragon Courseware		3495 Kensington Side Clip	6	Sna - System Network Architects		0410 Offline Version 2.0	59		
Mo 512 Optical Read/Write	2899	1473 Qued-M	74	STORAGE MEDIA		0410	Offline Version 2.0	59	Solutions		
PL Infinity Optical 3.5"	1699	Full Circle Corporation		Full Circle rebate on Special Values - Page 3)		1991	Smartarcap & The Clipper 2.0	55	Solomac Technology		
PL Infinity Optical 3.5"	1649	3410 Serious Animation Objects	64	2657 Fuji 10 Pk DS/DD 800 Fdisk	8	1956	Sentinel 2.2	95	Synantec		
PL Infinity Optical 600 Mb Hd.	3399	3411 Serious Communication Objects	64	4562 Fuji100 Pk Box DS/DD Bulk Pack	69	4663	S.U.M. 2.1	95	4663 S.U.M. 2.1	95	
PL Optical Cartridge (for 2851)	235	3408 Serious Developer	339	4563 Fuji100 Pk Box DS/DD Bulk Pack	139	4663	S.U.M. 2.1	95	Tactic Software		
PROGRAMS		3409 Serious Programmer	210	2658 Fuji 10 Pk DS/DD 1.44 Fdisks	14	2854	Icon II V2.2	44	2854 Icon II V2.2	44	
Corp.		Softstream International Inc.		3090 Fuji 10 Pk Rainbow DD Disk	9	4348	Shadow	69	4348 Shadow	69	
Superprint V3.0	134	3468 Relational Objex	148	Maxell Corporation Of America		ASD Software Inc.		3286 Fileguard	138		
bund		Somak		9095 Maxell MF2-DD 800K 3.5 Disks	11	3323	Fileguard Office Pack 10	789	3323 Fileguard Office Pack 10	789	
Kid Pix 1.2	31	2782 Script Edit	9	9096 Maxell MF2-HD 1.4M 3.5 Disks	19	3322	Fileguard Office Pack 5	488	3322 Fileguard Office Pack 5	488	
Macprint 2.0	89	Symantec		1578 60 Mb Backup Tape (Cs600Hd)	19	0412	Macosss & Fileguard Bundle	395	0412 Macosss & Fileguard Bundle	395	
ao Software		2091 Just Enough Pascal	51	2469 Maxell 150 Backup Tape Cs600Xd	24	0161	Macoss Card Reader	295	0161 Macoss Card Reader	295	
Mac Mac Cheese V2.07	64	4075 Think C V5.0	199	0139 PLI 4Mm Dat Backup Tape	49	Baseline Publishing		3764 1 Shot Worksheet	56		
Monet	249	4178 Think Pascal V4.0	164	0083 Syquest Cartridge 88 Mb	129	3763	App Express Tape	38	3763 App Express Tape	38	
Ultraprint	124	4185 Think Reference	69	2183 Syquest 44 Meg Cartridges Unfo	74	3766	Init Manager	34	3766 Init Manager	34	
Design		4185 Think Reference	69	4142 Syquest 44 Meg Cart 5 Pack	360	3762	Talking Moose	23	3762 Talking Moose	23	
Fractal Design Painter	199	4185 Think Reference	69	4143 Syquest 44 Meg Cart 10 Pack	700	Berkley Systems Design		2785 After Dark 2.0U	28		
Easy Color Paint	44	4185 Think Reference	69	0932 QD 2040 40 Mb Tape	19	4046	More After Dark Bundle V.2	41	4046 More After Dark Bundle V.2	41	
ed Publishers		4185 Think Reference	69	3109 Qd600A Data Cartridge 60Mb Tape	21	4053	More After Dark Vol. 1	22	4053 More After Dark Vol. 1	22	
Master Color	74	4185 Think Reference	69	1158 Sony 10 Pk DD/DD 800K Disks	12	1600	Stepping Out 2.02	54	1600 Stepping Out 2.02	54	
Masterprint 1.0	34	4185 Think Reference	69	2192 Sony 10 Pk DD/DD 1.44M Disks	19	Bright Star		0415 Accour Service	10		
Mac Technology		4185 Think Reference	69	0938 Sony 50 Pk DD/DD 800K Disks	75	4435	Jeeves	10	4435 Jeeves	10	
Pixelprint 2.1	148	4185 Think Reference	69	2193 Sony 50 Pk DD/DD 1.44M Disks	75	4433	Laura	10	4433 Laura	10	
FINANCE		4185 Think Reference	69	AMERICAN PROTECTORS AND UPS		4430	Mack	10	4430 Mack	10	
SHORT FORM 1040 EZ	24	4185 Think Reference	69	4264 Ups 110SE	208	4432	Madeline	10	4432 Madeline	10	
MacIntax 1991 - Early Version	61	4185 Think Reference	69	0305 Ups 370CI	338	4431	The Boss	10	4431 The Boss	10	
IT Forms Designer - Mac	168	4185 Think Reference	69	0280 Surge Protector EFI-153 6 Outlet	46	Casady And Greene		4700 Quickdex II	33		
ITX SF-171 Federal Emp App	31	4185 Think Reference	69	0281 Surge Protector EFI-453/15 Cord	89	2984	Desktop 4.0 + Gofor	62	2984 Desktop 4.0 + Gofor	62	
Smartform Designer	288	4185 Think Reference	69	Kensington		2189	Mockpackage Plus Utilities 4.4	31	2189 Mockpackage Plus Utilities 4.4	31	
Smartform Designer		4185 Think Reference	69	3339 Power Tree 10	19	3771	Quick Keys 2 Version 2.1	93	3771 Quick Keys 2 Version 2.1	93	
DacEasy Light Checkbook	19	4185 Think Reference	69	3342 Power Tree 20	27	0430	Individual's Resume Maker	29	0430 Individual's Resume Maker	29	
Accounting 2.0	19	4185 Think Reference	69	3343 Power Tree 50	54	0432	World For Word - Mac	79	0432 World For Word - Mac	79	
Software		4185 Think Reference	69	3338 Masterpiece Mac II	269	0416	Microlytics		0416 Elements Of Style 1.0 Mac	34	
Business Plan Toolkit	95	4185 Think Reference	69	3345 Power Backer 350	109	0437	Inside Information	67	0437 Inside Information	67	
ools		4185 Think Reference	69	3346 Power Backer 450	237	0438	Random House Encyclopedia Mac	67	0438 Random House Encyclopedia Mac	67	
io Plan Builder	93	4185 Think Reference	69	3347 Power Backer 520	337	1501	Wordfinder For Mac	33	1501 Wordfinder For Mac	33	
Managing Your Money 4.0	109	4185 Think Reference	69	3348 Power Backer 600	746	Microsoft Corporation		2238 Microsoft Word 4.0	244		
Calendar Creator Mac	109	4185 Think Reference	69	3349 Power Backer 1200	946	Nova Development		4263 American English Writing Guide	38		
Fast Forms 2.0	109	4185 Think Reference	69	Tripp Lite		4261	American Handbook Of Business	32	4261 American Handbook Of Business	32	
Quicken 3.0 Mac	44	4185 Think Reference	69	4605 Isobar 4 Surge Protector	49	4262	Instant Library Of Quotation	32	4262 Instant Library Of Quotation	32	
Dominator		4185 Think Reference	69	4607 Mac Director	89	4263	Paragon Courseware		4263 Paragon Courseware		
Sales Dominator, Ltd.	495	4185 Think Reference	69	SYQUEST DRIVES		3479	Nisus 3.06	244	3479 Nisus 3.06	244	
Corporation		4185 Think Reference	69	4589 Generation Sys. 45 Mb Rem Hd	589	Personal Bibliographic		4310 Biblio Links (Brs)	98		
Shana Informed Designer 1.2	77	4185 Think Reference	69	4691 88 MB Syquest Removable	799	4255	Biblio Links (Dialog)	98	4255 Biblio Links (Dialog)	98	
Shana Informed Autoform 1.2	158	4185 Think Reference	69	Maclogend		4251	Biblio Links (Medlars)	98	4251 Biblio Links (Medlars)	98	
Shana Informed Manager 2.0	98	4185 Think Reference	69	0921 Hd 45 Rem External	539	4532	ProCite 2.0	195	4532 ProCite 2.0	195	
NTATION		4185 Think Reference	69	Mass Microsystems		4266	ProSearch	149	4266 ProSearch	149	
Aldus Persuasion 2.0	328	4185 Think Reference	69	0175 Mass Microsys Daa Pak 45 Rem	649	Petrolpghy Inc.		3944 Editorial Advisor	74		
Ashton Tabe Full Impac 2.0	123	4185 Think Reference	69	0176 Mass Micro Data Pak Cx 45 Rem	669	Power Up		0211 Letter Writer Plus	59		
atlas Corp		4185 Think Reference	69	4062 Mass Micro DataPak 88	899	3201	Letter Writer Plus	59	3201 Letter Writer Plus	59	
Microsoft Powerpoint 2.01	244	4185 Think Reference	69	4151 DPI 45Mb Removable Syquest	589	1918	Vantage 1.5.1	50	1918 Vantage 1.5.1	50	
Technologies		4185 Think Reference	69	2181 PLI Infinity 40 Turbo Hd Rem	699	4597	Rightwriter 3.1	53	4597 Rightwriter 3.1	53	
Geovista	119	4185 Think Reference	69	2182 PLI Infinity 40/40 Turbo Hd	1199	3143	Grammatik Mac 2.0	57	3143 Grammatik Mac 2.0	57	
gic Mapping Inc.		4185 Think Reference	69	TABLETS		499	Bookends II Mac I/ci	63	499 Bookends II Mac I/ci	63	
Atlas Pro	599	4185 Think Reference	69	Kurita		Sna - System Network Architects		3452 Stylis	45		
More 3.1	264	4185 Think Reference	69	4316 Kurta ADB 12X12 Bund Cordless	339	3452	Stylis	45	3452 Stylis	45	
ER SUPPLIES		4185 Think Reference	69	3010 Kurta ADB 12X12 Tab W/Pen&Cur	329	Spinnaker		0211 Springboard Publisher II	108		
Imagewriter Ribbon - Black	4	4185 Think Reference	69	3011 Kurta ADB 12X12 Tab W/Pen&Cur	569	0433	The Resume Kit	25	0433 The Resume Kit	25	
Imagewriter Ribbon - Blue	6	4185 Think Reference	69	3013 Kurta ADB 8.5X11 Tab W/P&C Dis	304	4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
Imagewriter Ribbon - Brown	6	4185 Think Reference	69	0067 Wacom 12X12 Static Sur 421 E	935	4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
Imagewriter Ribbon - Green	6	4185 Think Reference	69	3803 Wacom SD-311E	1325	4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
Imagewriter Ribbon - MultiCol	6	4185 Think Reference	69	12X18 Elec Stat	935	4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
Imagewriter Ribbon - Red	6	4185 Think Reference	69	15X15 Stand Surf	720	4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
IPackard		4185 Think Reference	69	4192 Wacom SD-321L	795	4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
HP Toner Cart (P# 92295A)	74	4185 Think Reference	69	3801 Wacom SD-422L 12 X 12 Tablet	875	4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
HP Toner Cart(P#92275A)	74	4185 Think Reference	69	3942 Wacom SD510 4 Button Cursor	120	4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
HP Deskjet Cartridge (Black)	16	4185 Think Reference	69	3677 Wacom SD-420E 12X12 Std Surf	799	4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
Dixicon Pin Paperhd Cartrg/Blk	11	4185 Think Reference	69	3802 Wacom Sc-100 4 Button Cursor	120	4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
e Micro		4185 Think Reference	69	3496 Wacom SD-510C 6X9 Tablet	560	4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
512K Adapter Kit Grappler	26	4185 Think Reference	69	TIME BACKUP		4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
Grappler Plus	77	4185 Think Reference	69	Everex Systems		4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
Instruments (MicroLaser)		4185 Think Reference	69	2161 Emac 150 Tape Backup Drive	715	4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
Envelope Feeder (TEX-7001)	275	4185 Think Reference	69	2047 Emac 60T Tape Backup Drive	649	4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
2nd Bin Feeder (TEX-7002)	275	4185 Think Reference	69	TIME MANAGEMENT		4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
Letter Cassette (TEX-7010)	55	4185 Think Reference	69	Acme Management Systems		4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
Light Cassette (TEX-7012)	55	4185 Think Reference	69	3456 Fasttrack Schedule 1.5	138	4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
1MB Memory Upgrade	239	4185 Think Reference	69	After Hours Software		4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
Toner Kit	42	4185 Think Reference	69	3908 Touch Base 2.0	78	4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
OPC Cartridge	110	4185 Think Reference	69	Casio		4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
Developer	90	4185 Think Reference	69	3336 Casio Boss S18000	139	4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
ERS		4185 Think Reference	69	Co Software		4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
Technology Corp		4185 Think Reference	69	3624 Alarming Events	83	4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
LaserScript Lx	1728	4185 Think Reference	69	4197 Calendar Maker 3.0	30	4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
Abaton LaserScript Toner (2Pc)	69	4185 Think Reference	69	Chipsoft		4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
BP4040 PostScript Laser Printer	1499	4185 Think Reference	69	4550 Facilitator	129	4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
Address Writer	479	4185 Think Reference	69	Jam Software		4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
Costar Labelwriter II	189	4185 Think Reference	69	4406 Smart Alarms 3.1 1-4 Users	129	4465	WriteNow 2.2 Bundled w/ Mac Tools		4465 WriteNow 2.2 Bundled w/ Mac Tools		
Costar Organizer	169	4185 Think Reference</									



LOTUS

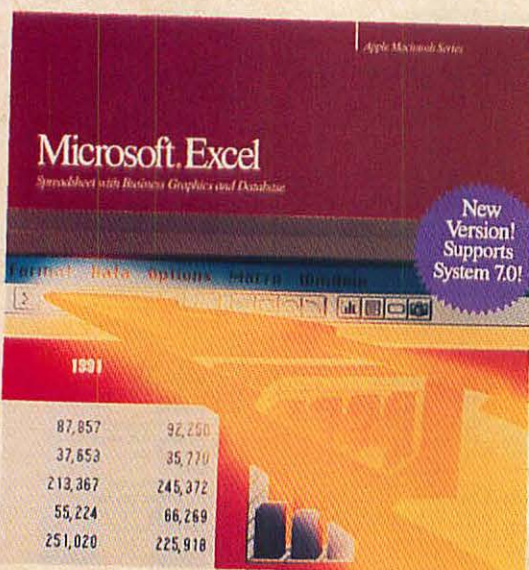
Lotus 1-2-3 Competitive Upgrade

Completely redesigned for use on the Macintosh, this new product makes your work incredibly easy! Lotus 1-2-3 for Macintosh delivers innovative spreadsheet capabilities that provide users simple access to commonly used functions, the ability to customize the desktop to their work styles, and direct manipulation of text, graphs and objects for intuitive operations. It also provides full file formatting, macro and keystroke compatibility with all versions of 1-2-3 using the menu invoked by hitting the "F" key. It will also fully support Apple's new System 7 operating system.

#00518

\$89

#00507 Lotus 1-2-3 \$339

**MICROSOFT Excel 3.0**

Microsoft Excel is the most advanced spreadsheet for the Mac. It combines a spreadsheet with business graphics and a database. It provides a worksheet area of 16,384 rows by 256 columns. Presentation tools, such as multiple fonts, variable row heights, shading, custom number formats, 68 built-in chart types and more, make Microsoft Excel the ultimate business tool. Excel has support from hundreds of other manufacturers' products and templates. Transfer Excel charts and worksheets into Word. Easy to update. #00227

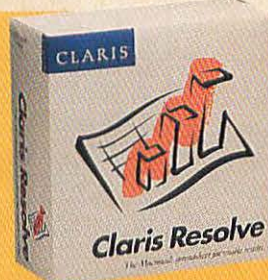
\$299

ABSOLUTE SOLUTIONS

Computerized Classic Accounting

Add to Excel 3.0. Computerized Classic Accounting is the only accounting package that does accounting in the form and organization of manual books. Anyone who knows traditional manual accounting will feel at home with CCA. It allows for extremely fast data entry, print checks, invoices, W-2's, etc. and generates reports. Since all CCA's documents may also be opened using Excel, you can customize, analyze, create forecasts and graphs using actual data that CCA summarized, formatted, and organized during the accounting process. #03369

\$229

**CLARIS Resolve**

Whether you're simply tracking expenses or creating sophisticated business models, Claris Resolve gives you the analytical tools needed to make informed financial decisions. Get started quickly using the accessible menus and online help. Visualize the results of your calculations with a full set of charts.

Present your final analysis integrating graphics and text for

\$234

The Mac
Zone
Established 1980

COMPUTER ASSOCIATES

ACCPAC Simply Accounting

ACCPAC Simply Accounting contains everything you need to get up and running in a flash: A primer that walks you through basic accounting principles, understandable documentation and software that includes a real-life tutorial with sample data. #04553

\$134

ACCPAC Bedford V1.1

Included in one fully integrated package ACCPAC Bedford Simply Accounting contains all accounting functions small business need most: General Ledger, Accounts Receivable, Invoicing, Job Costs, Accounts Payable, Payroll, Inventory, and Financial Statements. #04553

\$134



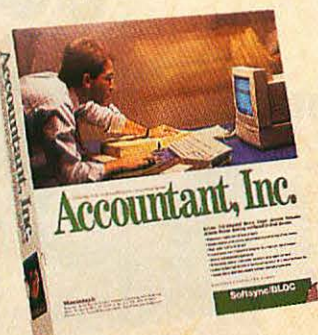
SURVIVOR

MacMoney

MacMoney is a full double-entry personal and small business bookkeeping system and financial planning tool. MacMoney tracks

expenses, bank accounts, credit cards, assets, liabilities, cash and income. You can create up to 250 accounting categories and divide transactions among as many as 8 categories. #01582

\$58

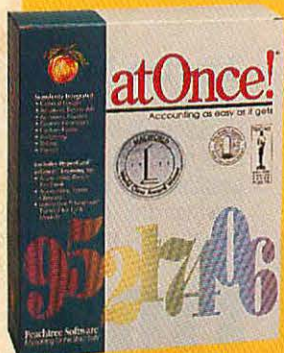


FTSYNC

Accountant, Inc.

Accountant, Inc. is perfect for any type of business - retail manufacturing, service or professional. It provides reports and performs analysis like no other software, so you can do what you do best and stop worrying about the accounting chores. Accountant, Inc. is a fully integrated accounting system. #3986

\$338

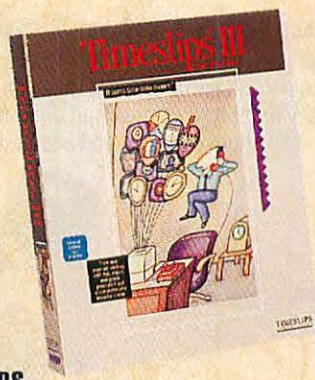


PEACHTREE atOnce!

Winner of Macworld's 1990 & 1991 World Class Award and the

MacUser 1989 Editor's Choice Award, atOnce! includes General Ledger, A/R, A/P and Payroll. All four modules are seamlessly integrated, so that information entered into one module is automatically reflected in other modules. atOnce! provides on-line, context-sensitive help and a HyperCard tutorial for hands-on practice. #02594

\$189



TIMESLIPS

TimeSlips III 2.0

TimeSlips III for the Mac is the ultimate time tracking billing software system. With it you'll find that your workday is being spent more productively, and that your billings are much more complete. The features and functions are so simple, they practically run themselves. #02512

\$194

SMART BUSINESS PRODUCTS FROM INMAN

Business Plan Toolkit

Business Plan Toolkit V.4.0

If you are a small business person or are an entrepreneur attempting to raise capital or secure a loan, this package is for you. Business Plan Toolkit is a practical guide for preparing a professional business plan with complete financial analysis, charts, sales forecasts and winning text. A complete sample plan is included on paper and on disk. Received 4.5 mice from MacUser. #03910

\$95

Business Sense 1.4.1

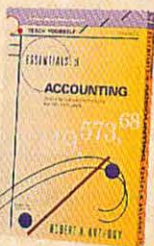
This accounting program has set the standard for small and medium sized businesses who need a program with General Ledger, Accounts Receivable, Accounts Payable, Payroll, Budgeting Job Costing and Invoicing. #00229

\$128

Essentials of Accounting

If you think accounting is tedious, think again! Regardless of your experience, Teach Yourself You will quickly master the essential concepts of accounting at your own pace. #04590

\$34



IN HOUSE SOFTWARE

In-House Accountant

In-House Accountant was developed from scratch to take full advantage of Macintosh's power. Familiar point-and-click operations let you see at a glance all of your financial information, anytime you want. Entries made in the transaction list immediately update all related items in other lists, so there's never a need for "posting." The program handles payables and receivables, by letting you move among various accounts without ever having to change modules, or even close a window. #03782

\$134

OPEN 24 HOURS • CALL: 1-800-248-0800

PassProof

The first complete data security system for the Mac. Heavy duty hardware includes disk drive lock, floppy and SCSI port plates. Special software includes password protection for multiple users, Quick Cover™ screen locking feature and User Log

\$70 to track authorized and unauthorized use. #04419 (Classic)

**Power Backer**

The Power Backer 520 supplies continuous power to protect any system from a momentary dip in power to a complete blackout. When power is restored, unit automatically switches back to AC wall current and filters surges and spikes. Back up power lasts from 5 to 65 minutes depending on unit chosen. (Name indicates VA rating and protection.) #03347



\$397

Custom Color Trackball

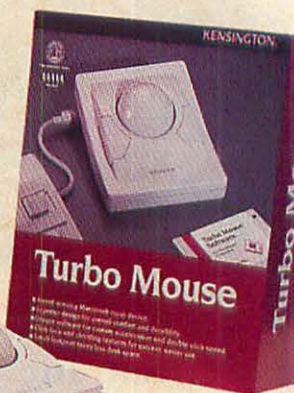
With Kensington Custom Trackballs, your Expert Mouse or Turbo Mouse can take on a whole new personality. Choose from any of four vibrant new colors. And of course, if variety is what you want, you can choose all four, and alternate them. Kensington Custom Trackballs will fit any Kensington mouse.

\$10

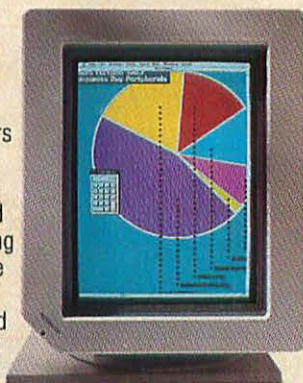
Turbo Mouse ADB

Winner of the '87, '88 and '89 MacWorld World Class Awards for Best Input Device. Turbo Mouse is quicker, more precise and easier to use than any other mouse. You move only the ball, not the whole mouse. #01411

\$107

**Radius Pivot Anti-glare Filter**

The perfect solution to a big, glaring problem. These high quality Anti-Glare Filters reduce the glare reflected from your large screen contrast and clarity up to 20 times! You'll be able to work more comfortably and efficiently — no more squinting and straining to read what's on your screen; no more sore eyes and blurred vision. Made of optical quality glass with ceramic anti-reflection and scratch-resistant coatings, these Filters slip right onto the front of your monitor for a "light-tight" fit. They allow the light to pass through your filter, never around it. They even increase the resolution of your screen display by eliminating the fuzzy "halo" around text and graphics. #04424



\$139

Space Saving LaserStand

Space saving printer stand stores and organizes two full reams of paper, envelopes, cassette trays and more. Unique cable management system protects and hides power cables and network interface boxes. Designed to match LaserWriter II but accommodates any printer of comparable size up to 75 lbs. Sturdy metal inner structure raises printer 7 1/2". #04427



\$128

THE COMPLETE KENSINGTON PRODUCT LINE**CABLES**

3360	Mac II Monitor Cable Ext. Kit	32
3359	Xtra Long ADB Keyboard Cable	24
COMPUTER EQUIPMENT COVERS		
2978	Dust Cover SE Ext. Keyboard	9
329	Keyboard Shelf Compact Mac	39
330	Keyboard Slideaway	34
3361	Dust Cover SE Std. Keyboard	9
3362	Imagewriter II Dust Cover	9
4688	Basic Briefcase 64071	44
4689	Slip On Case (Powerbook) 64070	14
4690	Deluxe Briefcase 64072	79
SECURITY		
3676	Pass Proof (Cx,Ci,Left Drive)	70
3660	Pass Proof (For Se Type Cases)	70
4419	Pass Proof Classic 64062	70
3357	Laserwriter II Security System	32
2979	Apple Security Kit System	32

STANDS

4427	Laserstand-Mac 62578	128
2539	Mac II Stand (No Cables)	19
3353	Macintosh II Monitor Stand	64
3354	Macintosh IIcx Monitor Stand	49
3350	Printer Muffler 80	43
4425	Printer Muffler 80 Stand	19
4426	Space Saving Printer Stand	19
2975	Super Base	31
2976	Tilt Swivel For SE Or SE/30	21
3355	Universal Copy Stand	22
2977	Universal Printer Stand	15
3495	Kensington Side Clip	6
SURGE PROTECTORS		
3339	Power Tree 10	19
3342	Power Tree 20	27
3343	Power Tree 50	54
3338	Masterpiece Mac II	105

SURGE PROTECTORS (CONT.)

3345	Power Backer 360	26
3346	Power Backer 450	33
3347	Power Backer 520	39
3348	Power Backer 800	74
3349	Power Backer 1200	94
TRACKBALL		
4421	Custom Color Track Ball-Purple 62374	1
4420	Custom Color Track Balls-Black 62371	1
4422	Custom Color Track Balls-Blue 62373	1
4423	Custom Color Track Balls-Red 62372	1
1292	Turbo Mouse (512K & Plus)	10
1411	Turbo Mouse ADB	10

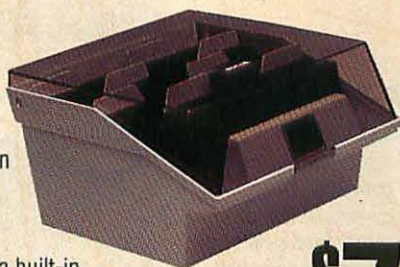
APO/FPO P.O. BOX ORDERS SHIPPED 1ST CLASS

The Mac Zone
Established 1980

LSOP

Disk Files

Conveniently preserve and organize your 3-1/2" disks with the Allsop Disk File organizers which provide an efficient way of accessing and storing your 3-1/2" computer disks. The innovative design provides a built-in handle for easy transport, adjustable dividers for categorical filing, and specifically built with high-quality materials for maximum disk protection.



\$7

AMERICAN POWER CONVERSION SurgeArrest

By combining capacitors, multiple varistors and toroidal chokes, SurgeArrest units provide the ultimate in AC and phone line protection. In fact, each SurgeArrest has achieved the best UL 1449 TVSS rating of 330 VL-N, 330 V L-G and 330V N-G. The SurgeArrest family incorporates three levels of protection; SurgeArrest, SurgeArrest PLUS EMI/EFI filters, and SurgeArrest

PLUS with Tel, which includes phone line suppression and a Lifetime Equipment Protection Guarantee.

#04574 SurgeArrest

#04575 SurgeArrest Plus \$34

#04576 SurgeArrest Plus with Telephone \$59

\$17

TRAVEL WITH YOUR MAC SAFELY WITH I/O DESIGN CASES



Ultimate Classic/SE Case

#03905

Ultimate Classic/SE Extended Case

#03794

Ultimate LC Case

#00721

\$68

\$74

\$94

9"x9"x3" padded pocket for mouse, cords and accessories. (Not on all models)
Padded flap separates hard disk from computer.
Padded handle for comfort; features Velcro enclosure.
2" Stiff nylon webbing maintains support.
Outer Handle assists in shoulder carrying.
Flush side pocket.

7. Shoulder strap with slip-stop pad.
8. 9"x12"x1" padded pocket for modem, disks and accessories.
9. 5/8" super high density foam padding for the "ultimate" in protection.
10. Heavy duty high tech hardware throughout.
11. Stress point cross & box stitched for added support.
12. Padded compartment fits any keyboard.
13. Lifetime Warranty.

Put your compact Macintosh into the Ultimate Classic/SE Extended carrying case and you can take it anywhere. This premium-quality case pampers and protects your Mac with its high density foam padding. The sturdy Du Pont Cordura Plus™ nylon exterior looks great and keeps the weight down. Inside, you will find a padded compartment for your keyboard (any model), mouse, external hard drive and cables. Two exterior pockets hold everything from manuals and floppy disks to sweaters and umbrellas. Now available in black, blue, and two hot new colors, Magenta and Aqua.



TARGUS

Premier Macintosh Case

Perfect for Mac SE and Classic. Features a padded compartment for your Mac, external hard drive and removable padded case for the extended keyboard. Portfolio section provides Velcro-secured disk pockets, mouse and cable pockets and pen and business card holders. "Zilicone" treated Oxford nylon outer shell is water repellent, scuff resistant and won't wear against clothing. Removable shoulder strap with hand grips. Nonskid shock-absorbing rubber feet. PVC-backed materials throughout provide anti-static qualities.

Lifetime replacement warranty.

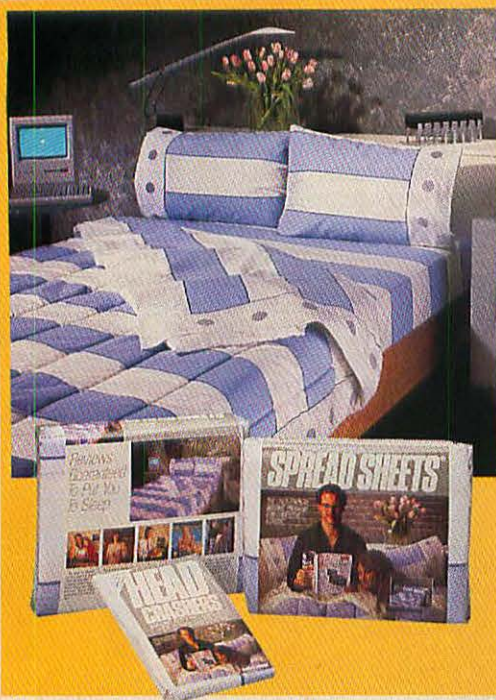
Available in black, navy, burgundy and gray.



\$74

OPEN 24 HOURS • CALL: 1-800-248-0800

ACCESSORIES



BEDWARE

SpreadSheets & HeadCrashers

The perfect gift for computer lovers! SpreadSheets are complete, fitted bed sheet/pillowcase sets in the popular blue-bar, tractor feed printer paper design. And the package is half the fun. HeadCrashers are the same pillowcases, but sold separately. They're all quality 180-count percale 50/50 cotton/poly. #04558 Twin Set #04557 Queen Set \$35 #04556 Pillowcases \$13

TWIN SET

\$26

COSTAR

Stingray

Stingray lets you work faster and with more comfort than any other pointing device. The Stingray combines all the comfort of a low profile mouse with the advanced features of a high precision trackball. The result is unmatched ease of use and comfort. You'll be amazed at how fast you can speed across your screen and through your applications with the Stingray. #00524 - Platinum #00523 - Black

\$88

SOPHISTICATED CIRCUITS

PowerKey with Quickeys Lite

PowerKey turns on your Macintosh and peripherals from the keyboard and also shuts down from the special menu. It can be programmed with an on/off schedule, useful for communications and backup applications. Its four outlets provide surge suppression, noise filtration and overload protection. Remote option lets you turn on your system with a single phone call. PowerKey works with any Macintosh ADB equipped Macintosh. Bundled with Quickeys Lite! #04604 #04669 Quickeys Lite \$31

\$63

DATADESK INTERNATIONAL

MAC-101E

MAC-101EQ is both the MAC-101E keyboard and Quickeys 2.1 macro software that includes the power of Apple Events. Successor to the best-selling MAC-101 keyboard, the MAC-101E is renowned for tactile-feedback keys that give you the "touch and feel" for faster typing with fewer mistakes. Utilizes the extended 105-key layout with built-in function key template system. #04318

\$149

MICROTOUCH SYSTEMS

UnMouse

The UnMouse is the intuitive touch tablet that lets you work both productively and creatively. To move the cursor, just slide your finger over the glass and press to click. It's the fastest device around - especially in Absolute mode with one million touch points mapping precisely to the screen. Just point to a location on the tablet and instantly the cursor will appear in the same location on the screen. And it's the only device that also works as a Power KeyPad with well-labeled templates which slide under the glass. Simply press down on a key to execute a command, macro or any combination of keystrokes. #03412

\$159**\$49**TRIPPLITE
ISOBAR Surge Suppressor

ISOBAR is the world's best-known, best-selling and most advanced surge suppressor. Gold Seal Warranty covers your Gold Seal product and connected equipment for life. Isolated filter banks and "cascade" circuitry provide premium surge, spike, and noise filtering. Command Console fits neatly between computer and monitor. #04605

TRIPPLITE
MacDirector

The first power protection console designed exclusively to match the look and feel of the Macintosh SE/Classic. Contains PC Magazine Editor's Choice circuitry. Includes modem protection. One year warranty. #04607

\$89**NO GIMMICKS - NO HIDDEN CHARGES**

The Mac
Zone
Established 1988

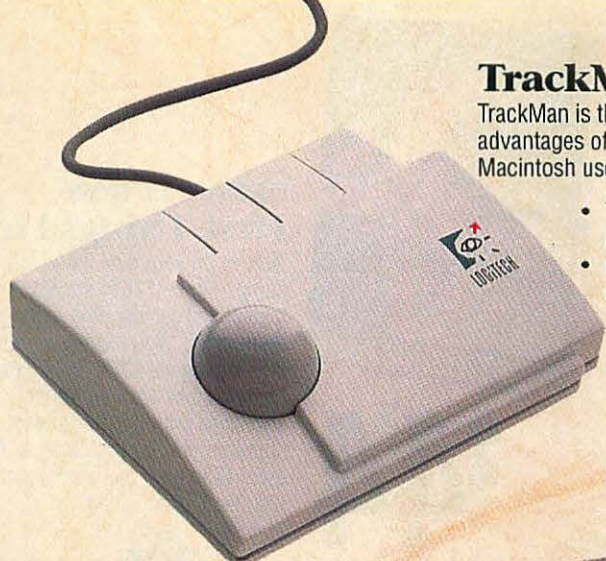
TrackMan

TrackMan is the revolutionary new input device for Macintosh that combines the advantages of both a mouse and a trackball. With three buttons, TrackMan offers Macintosh users a range of flexibility they've never seen before! #00550

- Thumb-operated ball for extra precision
- Hand-fitting design for ease of use and comfort

- Requires very little desk space
- Adjust resolution from 150-300 dpi for extra precision or speed
- Control Panel software makes it easy to program buttons for keystrokes and shortcuts
- Perfect for use with Macintosh, A/UX and X-Windows Operating Systems

\$84



ScanMan Model 32 with Digital Darkroom

ScanMan and Digital Darkroom together provide a lot of functionality without sacrificing affordability. In minutes, you can have a picture (black and white or gray) in your favorite word processor or page layout software, at a price everyone can afford!

Model 32 \$561
Logitech Scan Pad \$13 \$12

\$295



Mouse Man

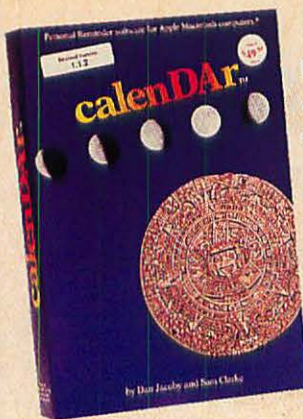
Until now, Macintosh users had few choices in their input devices. If a one-button mouse or large trackball didn't work for you, you were just out of luck. But now, Logitech offers a high resolution ergonomic mouse. MouseMan provides comfort, three buttons and enhanced tracking in a format that moves smoothly around your desktop. Mouse Man features include:

- Precise cursor control
 - Efficient use of desk space
 - Plug-in compatibility
 - High resolution
 - Reliability
- #04258

\$76



OPEN 24 HOURS • CALL: 1-800-248-0800



PSYBRON calenDAR

calenDAR is a desk accessory calendar. This brilliant full color DA keeps track of all those things you want to be reminded about. Birthdays, anniversaries, schedules, appointments, things to do, important dates, etc. It reminds you as instructed, no matter what applications you are running. In addition to your own personal reminders, calenDAR keeps you posted about civil and religious holidays so that you avoid planning conflicts. #04268

\$24



VISIONARY SOFTWARE

First Things First

Time is on your side with First Things First – FTF is the Mac's fastest and easiest time management utility. You'll enjoy the total convenience of FTF's revolutionary floating clock-icon for instant access to priorities, reminders, appointments and multiple to-do lists. Stay on top in the fast lane with First Things First! #04448

\$44

SUITCASE II FROM FIFTH GENERATION

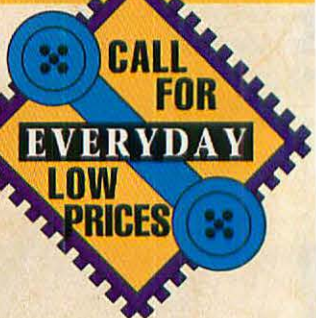


FIFTH GENERATION

Suitcase II v1.2

Suitcase II expands your font and desk accessory menus, giving you access to as many as 255 items in each. Once Suitcase II is running, you can install and use any font, DA or FKEY just by using Suitcase II to bring it in. Its most delightful feature is its ability to autoload font/DA files at startup. When Suitcase starts, it looks for files or folders named Fonts, DAs, and Fonts/DAs. If it finds and it opens them automatically. #02002

\$48



QuickDEX™

Free-Form Database Desk Accessory
... with Autodialer™



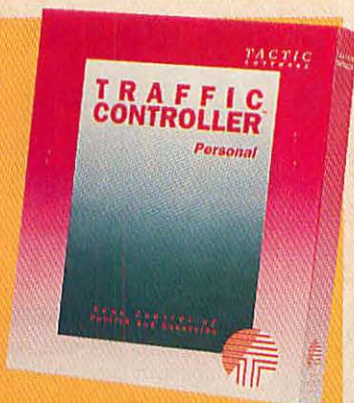
TACTIC SOFTWARE

Traffic Controller Personal

With System 7 you get powerful document linking capabilities with Publish and Subscribe. Once you begin using Publish and Subscribe you will notice how it will become difficult to keep track of all the data moving between applications. Traffic Controller Personal provides a graphical representation of each Publish and Subscribe Edition. It also has the following features:

- Have access to any current or past copy of an Edition.
- Move Editions to the clipboard for further manipulation.
- Date and Time stamp each Edition iteration.
- Give name and location of the Publisher's application.
- Works with Text files, PICT files, and even sounds.
- Indicates if an Edition is orphaned.

#04218



\$84

CASSADY & GREENE

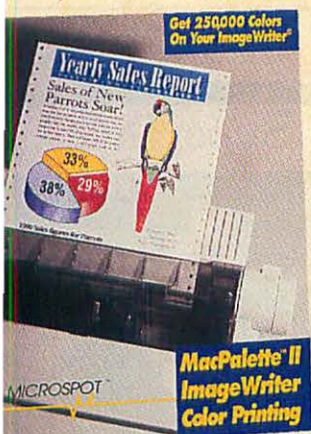
QuickDEX

QuickDEX is the fast and painless way to your data right under the Apple menu. QuickDEX stores data in "card decks." It fits in the QuickDEX menu, but you can have as many as memory allows. Files are compact and searches are speedy. QuickDEX is also smart enough to find and dial the phone number on a card when you click the Dial button. It also prints Rolodex cards and mailing labels. #04700

\$39

The Mac
Zone
Established 1984

ORDER BY 9PM E.T. WEEKDAYS, WE SHIP SAME DAY



04326 MacPalette II AppleTalk \$204

MICROSPOT

MacPalette II

Turn your ImageWriter II into a FULL COLOR printer—producing over 250,000 colors from just a four-color ribbon. This Chooser-level printer is easy to operate with on-line help dialog boxes. Also available is gray scale output using a black ribbon and scaling from 10 to 1000 percent. Compatible with any of the Macintosh II series, the Mac LC and the SE/30 and most Macintosh software. #00818

\$54

SHADOWWRITER



GIZMO TECHNOLOGIES

ShadowWriter

ShadowWriter is the latest software product that allows low-cost personal printers to be shared by all the Macs on a network. It installs in minutes to transform an inexpensive solo printer into a shared printer that any Mac on an AppleTalk-Compatible network can use. Share your StyleWriter, Personal LaserWriter LS, Personal LaserWriter SC, or LaserWriter IISC on the network! #04159

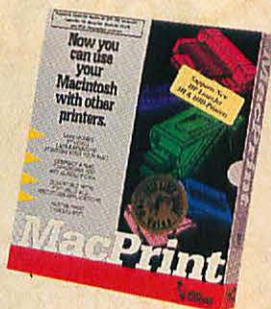
\$127



GOLDEN RIBBON Imagewriter Ribbons

MacZone offers only quality printer ribbons made in the USA. Each ribbon is made with the highest quality materials available and is designed to meet or exceed the original manufacturer's specifications. MacZone also offers a complete line of color printer ribbons including brown, blue, green, red, purple, yellow, orange, silver, and gold. Every MacZone printer ribbon will give exceptional print quality and the long life you expect with the largest selection of colors available.

From \$4

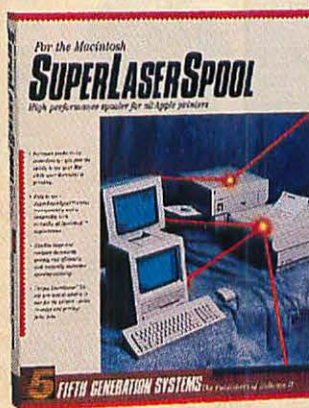


INSIGHT DEVELOPMENT MacPrint

Print any Macintosh application on many different printers. MacPrint is a chooser-level program, completely transparent in operation. It displays all your printer's resident fonts on screen. If none is found, it creates a printable font based on Macintosh QuickDraw screen font, maintaining spacings, style, and word wrap. What you see on the screen is what prints. Supports all internal fonts and font cartridges for HP and HP compatible printers like Pacific Data Products, Everex, Anacom and Computer Peripherals. #02423

\$93

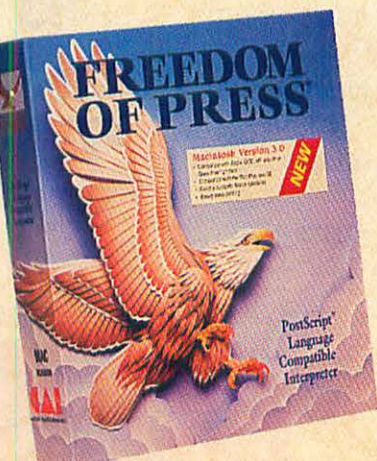
SUPER LASER SPOOL



FIFTH GENERATION SYSTEMS Super Spool 5.0

Controls your printer in the background as you work in the foreground. Automatically processes your documents, sends them to the printer and even downloads fonts while you continue working. Gets your Mac back in seconds instead of minutes or hours! #01122

\$61



CUSTOM APPLICATIONS

Freedom of Press 3.0

With Freedom of Press a PostScript printer is not required to output PostScript files. You can now print them to non-PostScript devices like the Hewlett Packard LaserJet II, IIP and III, DeskWriter, PaintJet and Epson LQ Dot Matrix Printers. It comes with 35 scalable PostScript fonts and supports all additional fonts including Adobe Type I and new Microsoft True Type. #03209

Freedom of Press Light
#03839 \$55

\$254



OPEN 24 HOURS • CALL: 1-800-248-0800

ALADDIN
ALADDIN SYSTEMS, INC.

SHORTCUT

BY RAYMOND LAU

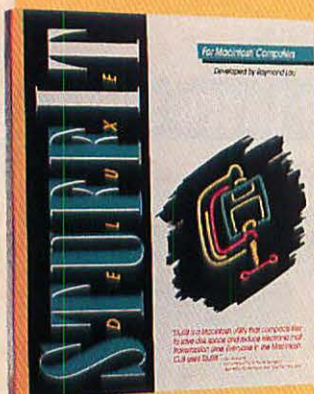
ALADDIN SYSTEMS Shortcut 1.5.2

Shortcut is a disk management utility that appears in every program's Open and Save dialogs. There you can quickly jump between

documents and folders or

find lost files within seconds. When saving any document, Shortcut lets you create folders for your new work. And there's more - anything you need to do within an Open or Save, Shortcut is your utility. A MacUser 5 mice winner. #02986

\$45



Stuffit Deluxe

Stuffit Deluxe is the easy-to-use Macintosh standard for compression, encryption and archiving. Files can be compressed up

to 98%, with 50% the average. Stuffit Deluxe comes with Finder Extension that makes compression as simple as clicking on any file, folder, or disk icon. A MacUser 5 mice winner. FREE upgrade to 3.0 #03458

\$61

ALYSIS

SuperDisk

SuperDisk is a system enhancement that effectively enlarges your hard disk through ultra-high-speed compression. Once it is installed, SuperDisk compresses and decompresses applications and data files automatically - transparently enlarging your hard disk. It offers the highest throughput and the greatest compatibility of any compression option available for the Macintosh. SuperDisk is the ONLY compression product that works with

\$59

programs like Disinfectant Virex™, On-Location™ and with files like control panels, INITs and desk accessories. It creates auto-expanding files and secures compressed files with two levels of password protection. #00512

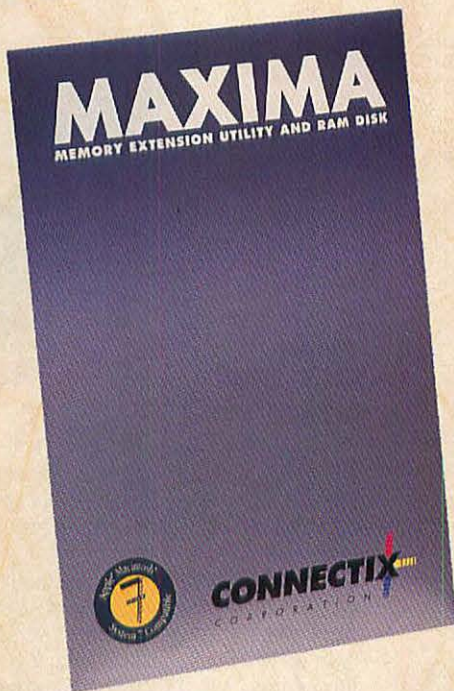
CONNECTIX

Maxima 2.0

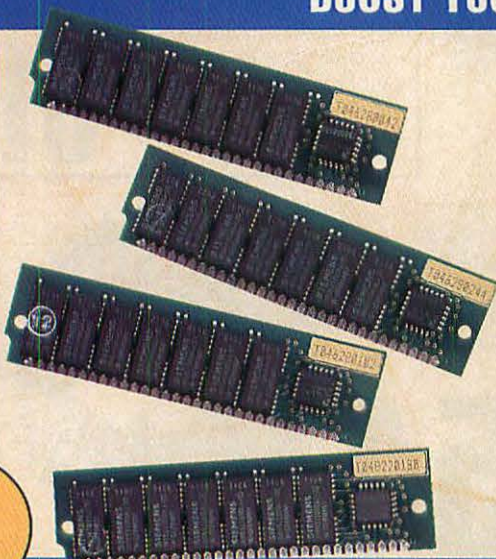
The versatile memory extension utility for Macs with 8 or more MB physical RAM. Creates 14 megabytes of enhanced 24-bit addressing. It also offers independent RAM dis for both 24- and 32-bit mode in either System 6 or System 7. Take full advantage of the power of your 4MB SIMMs with all your applications. #04144

\$44

#04013
MC73 \$148



BOOST YOUR MAC'S RAM WITH SIMMS



**1x8x80ns
SIMMS**

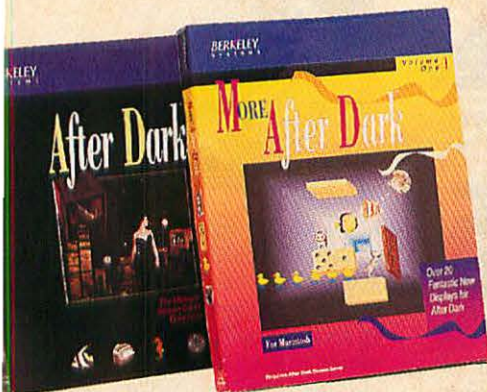
\$49 per Mb

#03586	1Mb NTX.....	\$49
#03579	4x 1Mb Fx.....	\$169
#03585	4x 4Mb Fx.....	\$759
#03583	4x 4Mb.....	\$639

NO GIMMICKS - NO HIDDEN CHARGES

**The Mac
Zone**
Established 1986

SCREEN SAVERS BY BERKLEY SYSTEMS



After Dark 2.0

Plus After Dark, the Ultimate Screen Saver Collection. Over 35 displays including classics Flying Toasters and Fish! With sound, password protection, logo and message display. #02785

\$28

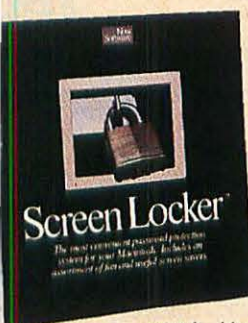
BERKELEY SYSTEMS

More After Dark (M.A.D.) & After Dark Bundle

It's M.A.D.! It's More After Dark - over 25 incredible new displays for After Dark, the Ultimate Screen Saver. Features contest winner Mowin' Man, Tunnel, GraphStat, and many beautiful new fish! Crazy Kittens, Art Museum, and Lunatic Fringe game module help save your screen from phosphor burn-in. Requires After Dark. Bundle #04046

More After Dark
#04053 \$24

\$41



NOW

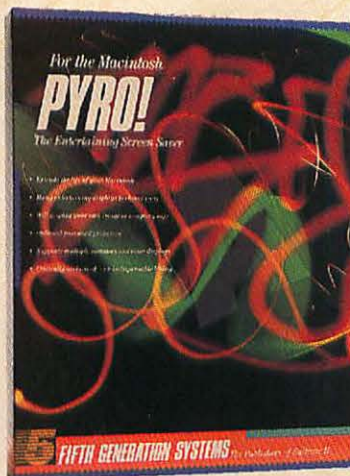
Screen Locker

Now you don't need to worry when you leave your Macintosh unattended. Screen Locker™ protects it 24 hours a day, seven days a week. Best of all, you don't even have to remember to turn it on. Reliable - Screen Locker won't let anyone see what's on your Macintosh unless they have your password. Period. Even if they re-

start it. Your Password and Backdoor Keys are

den and encrypted, so it's virtually impossible for intruder to discover them. Watchful Management - The time, date, and result of every break-in attempt is logged and can be viewed or printed. #522

\$44

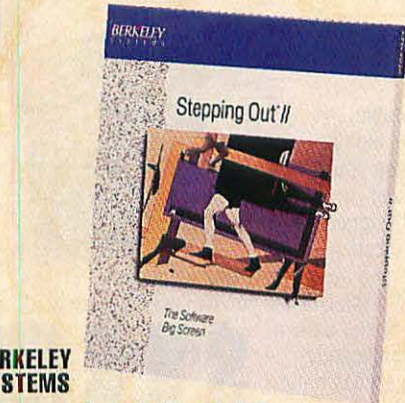


FIFTH GENERATION

Pyro 4.0

Pyro belongs on every Mac to prevent screen damage. Images left on-screen for too long can burn a permanent image into the phosphors. Pyro automatically substitutes a variety of user-selectable graphic routines designed to keep damage from happening. Touch any key or nudge the mouse to bring the original display back. #02194

\$24

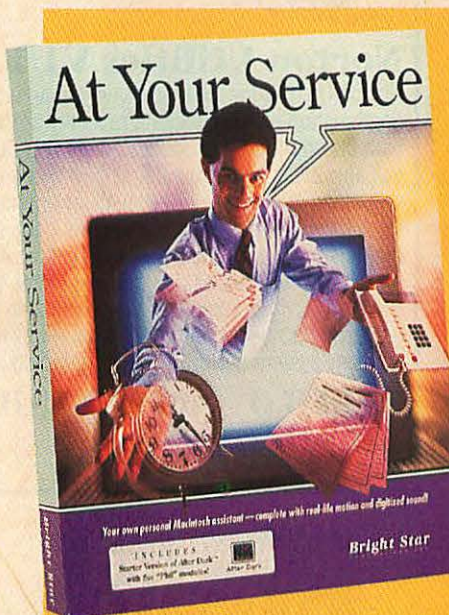


BERKLEY
SYSTEMS

Stepping Out II

Stepping Out II is software which extends the capabilities of the standard Macintosh® display to give it the same feel and features as a big screen. With Stepping Out II, you choose the screen size that is most comfortable for the task at hand. You can work with a part of the big screen at normal size or with the whole screen reduced. For detail work you can enlarge any portion of the big screen up to sixteen times. #01600

\$54



BRIGHTSTAR

At Your Service

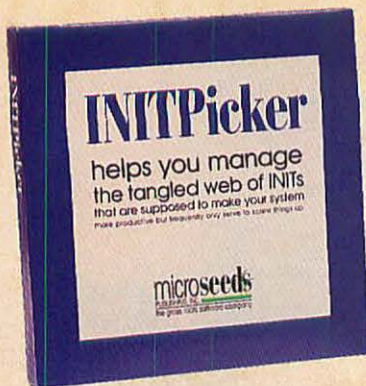
Give your Mac real personality with Phil - your "talking" Personal Assistant. Phil reminds you of appointments, notifies you when E-Mail arrives, monitors keyboard and mouse activity to suggest when to take a break, and gives full system report. Includes a starter version of After Dark, along with five unique modules. And now, add new faces and voices to At Your Service with BrightStar's Catalog of Actors. Choose from Laura, Gabrielle, Mack, Jeeves, Madeline, and The Boss. Six new ways to personalize your Mac like you've never seen - or heard - before! #00415

#04435
Catalog of Actors \$10

\$30

SCREEN UTILITIES

OPEN 24 HOURS • CALL: 1-800-248-0800

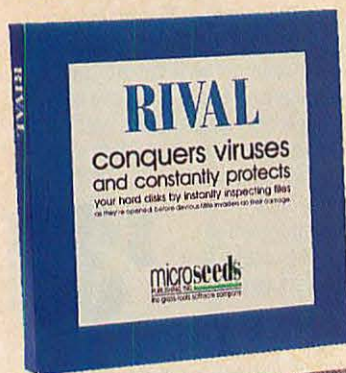


MICROSEEDS INITPicker 2.0

INITPicker 2.0 helps you manage the tangled web of INITs that are supposed to make your system more productive but frequently only serve to screw things up. #02191



\$35



MICROSEEDS Rival

Rival makes virus detection simple, painless, and automatic. Instead of nagging you with endless disk scans, Rival quietly checks each file as it's opened, and only alerts you if it actually finds an infected file. Rival is inconspicuous yet absolutely safe and effective, since viruses are detected and removed before they have a chance to spread. Of course, you can always use Rival to scan files, folders and entire disks whenever you choose. #03327

\$54



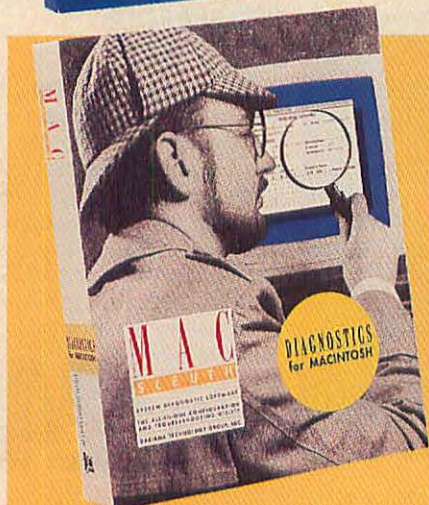
MICROCOM Carbon Copy Mac

Absolutely the best value in remote control, at the best price. You can direct another Mac's screen, keyboard, and mouse, or exchange files from anywhere. Its ideal for working away from your office. Plus, Carbon Copy has powerful password protection and includes the Virex INIT for virus-free file transfer. Two copies are required. Carbon Copy Mac is ideal for training users, collaborating on projects and supporting and troubleshooting your AppleTalk network. #04127

\$62

#04409 Unlimited Network Version

\$199



DARIANA TECHNOLOGY GROUP, INC. MacSleuth

MacSleuth is the first comprehensive systems analysis program for the Apple Macintosh. Supplies the user with a wealth of data about the system under examination. MacSleuth features include hardware information—showing the video interface, details about the sound subsystem, SCSI interface, the Apple Desktop Bus and Nubus slots. Startup information displays the boot volume directory and version number, System, Finder and Debugger names, application file names and System zone sizes. #03799

\$85

PROTECT YOUR WORK WITH A SYMANETC BUNDLE



SAM 3.0

The Symantec Anti-Virus for Macintosh detects viruses by monitoring the suspicious activities that characterize them. The INIT portion acts like a watchdog during startup to detect viral activity. The CDEV portion operates during normal Mac usage and offers a number of options for checking disks and folders as you work. SAM has an Audit Trail to keep track of its activity and your responses.

Norton Utilities V1.1

Norton Utilities for the Mac gives you an unbeatable combination of disk and data recovery software, along with disk optimization utilities. Now you can keep your valuable disks and data safe, secure and operating smoothly. It provides three levels of unerase, designed to give you optimal recovery options. The advanced diagnostic routines dig deep into the Mac operating system tool box to search for and recover lost data in minutes. With the Norton Utilities you can even unformat an accidentally-formatted hard disk. You also get Speed Disk, a powerful disk defragmenter and optimizer to significantly increase system performance by reducing data access time.

SAM 3.0 - Norton Utilities V1.1 Bundle

#04341



\$119

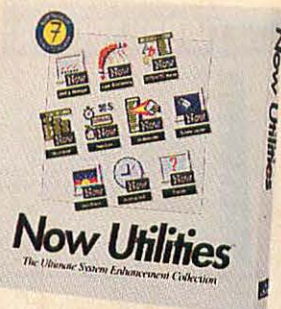


SATURDAY AIRBORNE EXPRESS DELIVERY MOST DESTINATIONS

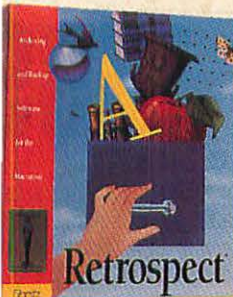
The Mac Zone
Established 1980

W SOFTWARE ow Utilities

According to MacUser, "Now Utilities must-have for experienced users & novice users alike." Included in collection are: Super Boomer, rated as the best of the Open & the dialog box enhancers; StartUp Manager, the most powerful extension manager; and WYS/WYG nus, which groups font families either in their own typeface. Plus: NowSave, Screen Locker, AlarmsClock, Profiler, MultiMaster, DiskPicture, and NowMenus! All components are System 7 compatible. #04191



\$84

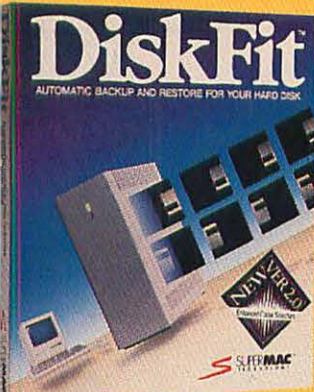


DANTZ Retrospect 1.3

Schedule automatic, unattended backup to any tape, optical or cartridge drive with Retrospect's calendar launch features. Liberate valuable hard disk space by archiving inactive files until needed. For the network manager, Retrospect Remote backs up an entire network of

Macintoshes to a single storage device, without remote user action or interference. Security is maintained by extensive password protection and optional data encryption. Add additional users with Remote 10-packs. #02586

\$146



DANTZ DiskFit Pro

DiskFit Pro is a handy utility for backing up your hard disk on a series of floppies. DiskFit saves time. It backs up only those files which have been changed since the last backup. It can verify each floppy after copying files onto it, so you know your files are safe. DiskFit also discards old versions. #04722

\$69



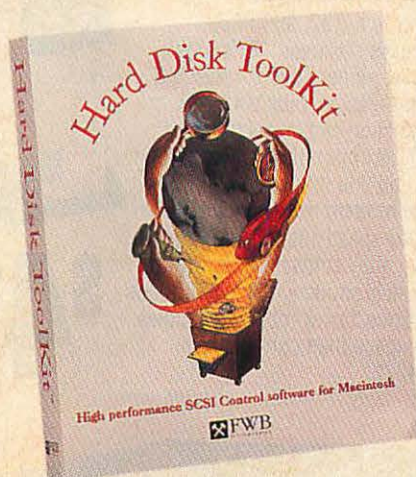
SYMANTEC SUM II

SUM II™ is a completely new version of the award-winning Macintosh utility program. This version offers all of the power and usefulness of SUM Version 1 while incorporating an entirely new interface, three new utility programs, and added features in every other utility. SUM II is the most powerful set of utilities available for ensuring that

your data is safe, secure, and efficiently organized. #02754

\$95

TOTAL SCSI CONTROL BY FWB

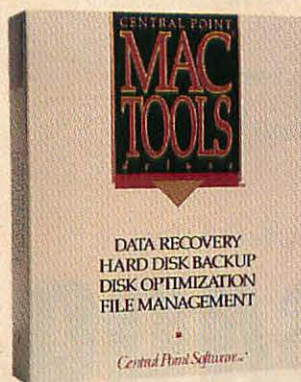


FWB

Hard Disk ToolKit™

Hard Disk ToolKit™ replaces your SCSI hard disk or removable drive's original installer with a sophisticated multi-module SCSI utility package that gives you total control over your SCSI world. It is easy to use, yet offers the performance, power, and flexibility demanded by sophisticated users. #00555

\$139

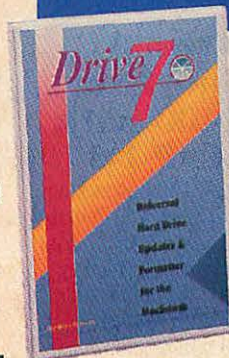


CENTRAL POINT SOFTWARE

Mac Tools Deluxe

Mac Tools provides utilities for data recovery, file protection, and disk management. You can make backups of your hard disk whether on Apple tape drive or a set of floppies. Other utilities in the collection undelete accidentally erased files, recover damaged files, compress files, defragment files, and encrypt them. A DA finds "lost" files fast. #03481

\$78



A MAC ZONE EXCLUSIVE!

CASA BLANCA WORKS, INC.

Universal System 7 Formatter/Updater

Did you know that Apple's hard drive formatter works only on Apple drives? And most third party drivers are incompatible with any other drives? Drive7 formats and updates most third party as well as Apple drives, freeing you from taking chances on 7.0 compatibility. Provides customized partitions, VM on Macs

and Syquest, passwords, locking, and more! If you have multiple hard drives, you need Drive7! The most versatile and affordable formatter available. #04472

\$44

HARD DRIVE UTILITIES

OPEN 24 HOURS • CALL: 1-800-248-0800

COMPUTER PERIPHERALS

Viva 9642e V.32/ V.42 bis Modem

The ViVa™ 9642e is a V.32, 9600 Baud modem that means business. This high speed, full duplex modem has V.42bis and MNP5 data compression, plus V.42 and MNP4 error detection and correction. All this adds up to maximum throughput rate of 38,400bps, saving you time and money! The ViVa 9642e modem has sophisticated features like auto-speed adjustment, auto-speed buffering, auto-software or hardware flow control, synchronous and asynchronous operations. Unique "tower" design occupies 65% less desk space than conventional modems. #04272



\$419



DOVE

DoveFax LAN

Hardware Features: Combines a 9600 baud fax & 2400 baud Hayes compatible data modem. CCITT Group III compatibility provides access to over 95% of fax machines worldwide. G3 Compatible External or Internal models

Software Features:

- Multiple users send faxes via network server
- Does not require a dedicated server
- Full background send and receive capabilities
- Auto receive and retry
- Customizable cover pages
- Automatic report logs fax activity
- On-screen display of faxes with magnification option
- Fax preview option

#04756



\$499



US ROBOTICS Sportster 2400 with MNP 1-5

The 2400 bps modem that gives you industry standard MNP Levels 2-4 error correction.

Under MNP, the data arrives 100% error-free, even if the connection is less than perfect. With MNP Level 5 data compression, you can transmit at up to twice the speed of a regular 2400 bps modem. That can save you up to 50% on phone calls where you're sending files.

#04606

\$159

NETWORKABLE FAX BY CYPRESS RESEARCH



\$999

CYPRESS RESEARCH

FaxPro Networkable Fax

The FaxPro Networkable Fax System allows all Macintoshes on a network to send and receive faxes from a single or multiple shared FaxPro modem. FaxPro comes complete with all required software for connecting an unlimited number of Macintoshes.

E-mail and gateway software are not needed with the FaxPro system to operate on a network. Specifications include: 9600-b send and receive Group III-compatible fax modem, 2400-baud hayes-compatible data modem (data modem is not networkable), automatic fax/data modem switching, auto-queuing of network fax jobs, fax status reported across the network, auto-archiving network incoming/outgoing fax log, address book software, fax viewing and printing. #04585



LEXUS

2400 Turbo Lexus Modem

Intelligent, compact 2400 baud modem. Fully compatible with Hayes AT command set. Easy to install and ready-to-use, all cables included. All the features you need in a modem, including auto answer, auto and Advanced Diagnostics for error checking. Eight front panel LEDs let you know what the modem is doing. Compatible with all major communications software. Comes complete with everything you need to get started, including, MacKnowledge 1.02 MZ communications software, special introductory membership to CompuServe and Genie.

#00028

\$89

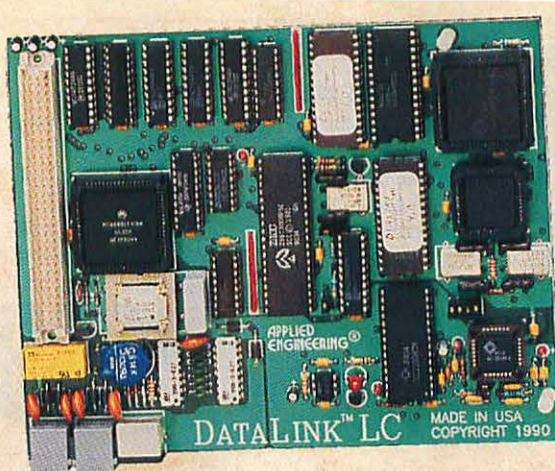
The Mac
Zone
Established 1984



BEST DATA Smart One 2400 XMAC Modem

The Smart One 2400XMAC - Stand Alone Modem for Macintosh Plus and SE is a complete communication package for beginners and experienced modem users alike. Incorporating the latest in CMOS technology, Smart One runs cooler, lasts longer and uses less energy than other modems. Best Data Products has included software, cable, technical support... everything you need for immediate hookup! #04243

\$99



APPLIED ENGINEERING DataLink LC

The DataLink LC is a networkable, Hayes compatible, V.42bis, 2400/9600 data/fax modem. It includes an extra serial port, Send & Receive Fax software and more than \$200 in one-line offers, 68882 math chip optional. 5 year warranty. #04579

**FREE
SHIPPING**

**ON ORDERS
PLACED
BETWEEN
6 & 4
P.M.
PST**

\$299

LISYS eFax

Now you can send or receive faxes directly from your Macintosh and at a 16 level half-tone scanner and a 200 dpi printer all in one very convenient and portable package. AutoFAX software includes powerful graphics editing capabilities for scanned or red documents. #0256

\$69



\$148



HAYES Personal Modem 2400 Plus

Personal Modem 2400 Plus and Smartcom for the Mac.

Ready to go on-line? Here's the solution in one package.

Everything you need - 2400 bps modem, communications software, and telephone and computer cables. You'll be on-line in a matter of minutes after opening this value-packed package. Perfect for offices at home, at school, or for remote office site. #00451

POWERFUL PROMODEMS FROM PROMETHEUS

ProModem 2496S/R Minifax

Why pay more for a large sized modem when you can get everything you need in a unit half the size and price? The

ProModem mini line offers features like V.42bis MNP-5 data compression and error correction in data and data/fax modems that save valuable desk space and money! With different versions available, you can select one that meets your particular needs. All include MACKNOWLEDGE™ communications software and cable; fax modems also have the new 1.0 fax software. #04596

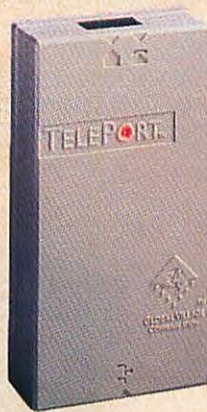


\$269

#04416 ProModem 2400 Mini Plus (data-only, V.42bis/MNP-5) \$123

GLOBAL VILLAGE TelePort Fax 24/96

Send faxes with the push of a button. TelePort plugs into your ADB connector (like your mouse and keyboard), eliminating a power adaptor, freeing your serial ports, and enhancing portability. TelePort, 2400 baud Hayes compatible modem, incorporates MNP5 data compression/error corrections. Eddy Award 1990 #00395



\$184

OPEN 24 HOURS • CALL: 1-800-248-0800



PACER SOFTWARE PacerTerm

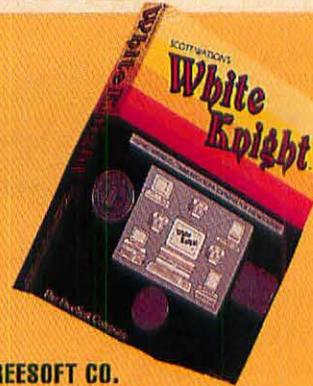
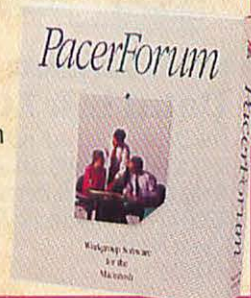
PacerTerm combines today's standards - Apple Comm Toolbox and HyperTalk scripting - with the best collection of file transfer (FTP, Kermit, XMODEM, ZMODEM) and connection protocols (TCP/IP, LAT, Modem and Serial). Flexible, easy-to-use features like keyboard remapping, on-screen SoftKeys, and multiple VT320 terminal windows, allow PacerTerm users to create powerful front-ends to host applications and on-line services. Apple calls it "Macintosh networking at its best!" #04163

\$159

PacerForum

PacerForum makes it easier than ever for your workgroup to collaborate and communicate - MacWEEK calls PacerForum "a very useful tool that will greatly facilitate office communication." PacerForum provides easy and efficient distribution of information on any AppleTalk network. Its interactive bulletin board lets you attach files, pictures and sounds to create messages that get results. #04473

\$349

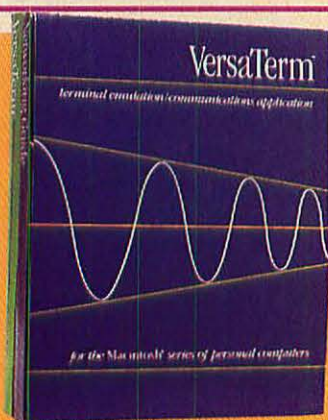


FREESoft CO.

White Knight II

White Knight is a powerful general-purpose telecommunications program that packs in almost every imaginable feature. It combines technical sophistication, flexibility, user-friendliness. White Knight takes strong advantage of the capabilities of 128K ROM's, which means that it will run on a Mac Plus, SE, II or later machine. #02881

\$84



SYNERGY VersaTerm V.4.5

VersaTerm offers DEC VT100, VT220 and Data General D200 test emulations, and Tektronix 4010/4012/4014 graphics emulations. A system 7.0 "savvy" application which supports Apple Events and the Edition Manager's Publisher. VersaTerm comes with a

complete set of tools and INITs, including MacTCP (TCP/IP), Telnet and FTP tools, LAT (DEC VMS Ethernet), ADSP (Apple Talk Data Stream Protocol, plus serial and modem tools. File transfer capability includes: FTP (Client and Server), XModem, YModem and Kermit. VersaTerm supports LocalTalk, Ethernet, modems or direct connections. #00643

\$87



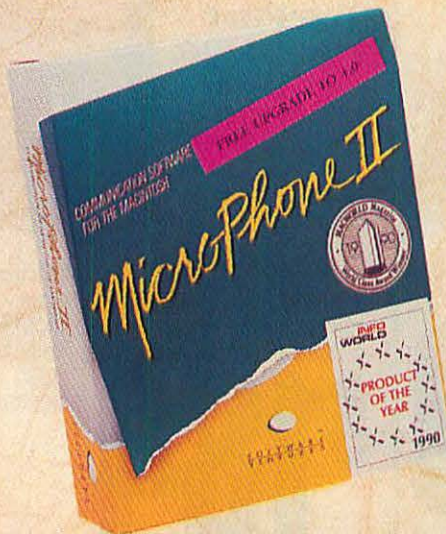
LEXUS

2400 Turbo Lexus Modem

Intelligent, compact 2400 baud modem. Fully compatible with Hayes AT command set. Easy to install and ready-to-use, all cables included. All the features you need in a modem, including auto answer, auto Dial and Advance

Diagnostics for error checking. Eight front panel LED lights let you know what the modem is doing. Compatible with all major communications software. Comes complete with everything you need to get started, including, MacKnowledge 1.02 MZ communications software, special introductory membership to CompuServe and Genie. #00028

\$89



SOFTWARE VENTURES MicroPhone II 4.0

MicroPhone II V.4.0 delivers communications without the hassle. Ideal for international telecommunications. Praised for ease of use and advanced scripting language, MicroPhone II 4.0 now contains faster script execution, screen speed, file transfers and new interface design tools. Supports ZMODEM transfer protocol and can operate modem any speed from 50 to 57,600 baud. It includes predesigned front-ends that put you touch with MCI Mail, CompuServe, Dow Jones, and other info services. #01902

\$209



HASSLE-FREE CANADIAN SHIPPING

The Mac
Zone
Established 1980



AREOSY SOFTWARE

Run PC Network

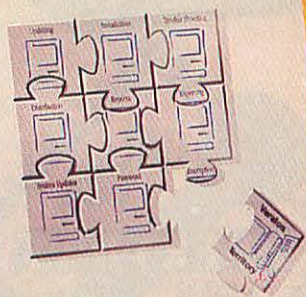
Connect your Mac to an IBM PC compatible and run virtually any DOS program in a Mac window. DOS programs run on the PC, but are viewed and controlled with the Mac. Run programs at full speed, even programs using VGA graphics and extended/expanded memory. Includes software Bridge/Mac for document translation. RunPC/Network connects up to 10 Macs to a PC via modem or the included serial cable.

#241

**\$279****Software Bridge V. 2.01**

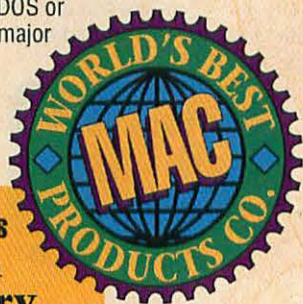
Imagine being able to edit DOS documents in your Mac format just by double-clicking them! With SB/Mac you can. Simply double-click on a DOS document and SB/Mac identifies, translates, and launches it into your Mac format, ready to edit. SB/Mac also translates Mac to Mac, Mac to DOS or even DOS to DOS formats (over 30 major word processors are supported).

#03894

\$99**VersionTerritory**Network
Updating
Software**SOFTWRITER'S
Version
Territory**

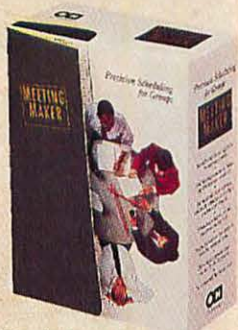
With Version Territory you can perform updates easier, faster and more reliable than with any other update method! Version Territory distributes documents, updates address books, installs startup documents, maintains consistent System Folders, distributes FONTS, and performs complicated installations easily.

#04126

\$339**ON TECHNOLOGY PRODUCTS****Meeting Maker**

MeetingMaker™ is a Macintosh network application that helps you plan, schedule and confirm meetings. You can schedule a time and date, select required guests, reserve rooms and resources and prepare agendas. Meeting Maker also has a personal calendar that allows you to block out activities, meetings, private work

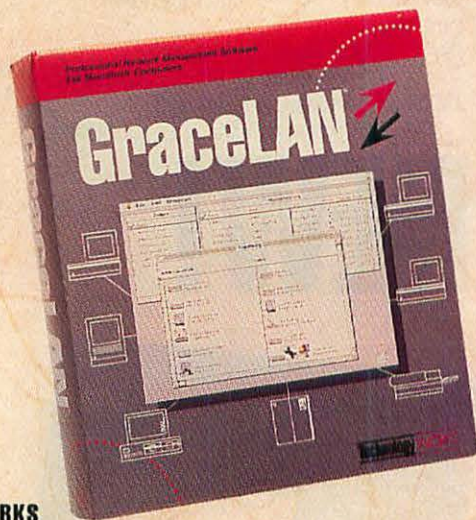
\$314 sessions, even recurring weekly or monthly appointments in a single step. #04009

**Instant Update**

With Instant Update, your group works together on virtually anything that needs joint effort. You don't have the headaches of printing, copying, distributing, waiting, chasing down, editing, re-printing, and re-distributing all of your work; or the constant interruption of meetings and e-mail notifications. From proposals to to-do lists and creative brainstorming to



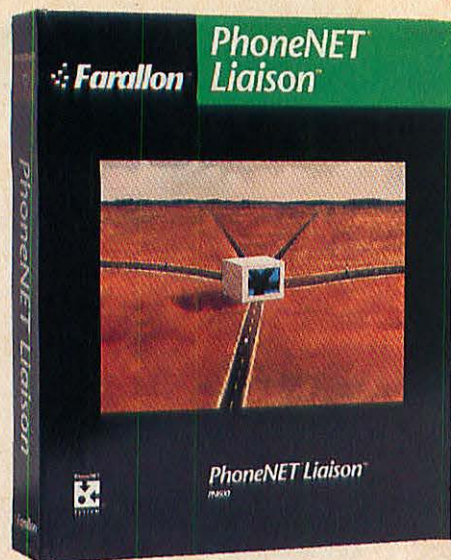
activity reports, Instant Update means that you've got the latest information whether you read it at nine in the morning or five in the afternoon. #04048

\$279**TECHNOLOGY WORKS****GraceLAN 2.0**

Technology Works' GraceLAN network management software lets you scan and profile every Macintosh, printer, PC monitor, NuBus Card, network peripheral or SCSI device on any size network - without leaving your desk! Now GraceLAN ver. 2.0 has added security, more detailed information and enhanced exporting capabilities with templates for Filemaker and Excel. GraceLAN ver. 2.0 is System 7.0 compatible, featuring balloon help, migration help and System 7.0 specific information, making it a great tool for migrating to System 7.0.

#04029

\$318**OPEN 24 HOURS • CALL: 1-800-248-0800**



FARALLON

PhoneNET Liaison

Liaison is a fully automatic software router that connects up to five different AppleTalk networks—including LocalTalk, EtherTalk, and TokenTalk—whether they're in the same building or hundreds of miles away. EtherTalk users can use LocalTalk printers. TokenTalk users can access EtherTalk file servers. Liaison even supports mixed AppleTalk Phase 1 and Phase 2 networks. Sharing network services and peripherals is cost effective—and so is Liaison, the software routing solution that doesn't require an expensive, dedicated hardware device. Just drop it in the System Folder to run it in the background on any Macintosh. Liaison also connects local area networks hundreds of miles apart. Attach a modem to a Liaison-equipped Macintosh at each site. Then just point and click in your personalized address window to dial up another network. Users on your network will see remote users as though they were in the same building. Liaison gives you a sophisticated password system to protect your network's privacy.

Assign dial-in users unique passwords, and then choose what level of network access to grant them. Liaison provides the economical software routing solution. #02483

\$258

FARALLON

Star Controllers

Manage and expand your network easier than ever!

Span greater distance - Star Controllers hub's patented circuitry amplifies LocalTalk signals up to 1Mbs.

In-band management - with StarCommand v3.0 software manage your StarController hubs from any Macintosh computer on their network.

Automatic naming - Port names are automatically assigned to the new hubs, view network names of computers and peripherals.

#4738 12 port StarController with StarCommand v3.0 **\$1049**

#4739 24 port StarController with StarCommand v3.0 **\$1349**

NEW!

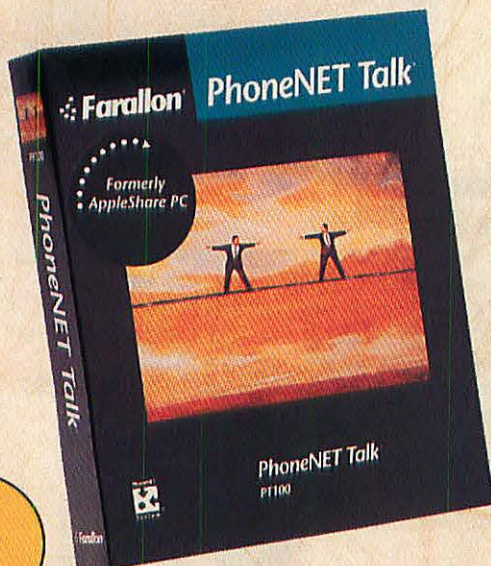
FARALLON

PhoneNET Management Software

The PhoneNET Manager's Pack provides all the software tools needed to map, troubleshoot, and maintain your network. Create a router connection graphic map with NetAtlas, to save for future comparisons. TrafficWatch II lets you analyze traffic protocols and error rates on Ethernet and LocalTalk networks. Search multiple zones and bridges with PhoneNet CheckNET 2.0. Two copies of Timbuktu 4.0 included to manage headless servers and support network users. #03900

\$668

(WHILE SUPPLIES LAST)



FARALLON

PhoneNET Card PC LocalTalk

The PhoneNET Card PC for LocalTalk (formerly Apple LocalTalk PC Card) allows users of MS-DOS and Windows personal computers to share high-quality laser printers, file servers, and other services available on an AppleTalk network.

#00353

\$208



The Mac Zone
Established 1981

INTERNATIONAL ORDERS CALL: 206-883-3088

DAYNA

EtherPrint

EtherPrint connects LocalTalk printers to EtherNet Systems. You won't need expensive bridges or routers to connect your printer, because this low cost device EtherTalk signals to LocalTalk. If you need the speed and performance of EtherNet, you can still use your LaserWriter. Just insert EtherPrint between your network and your printer. It's so user-transparent you forget it's there. EtherPrint comes with a built-in thin EtherNet transceiver. EtherPrint supports LocalTalk Phase 1 and 2, and all LocalTalk compatible printers including Apple LaserWriters and ImageWriters, plus QUME, IBM 4216 Personal Page Printer II, HP DeskWriter and LaserJet printers.

#00003

\$348

#00003	10BaseT	\$348
#03546	LocalTalk	\$348
#00321	EtherPrint Plus	\$599
#00322	EtherPrint T-Plus	\$620

**Daynaport E/Z**

For compact Macs such as the Classic, Portable or Plus, or any Mac without a free card slot, we have the fastest and easiest Ethernet connection around. This external connector box plugs into the printer port and communicates at high-speed with the Macintosh processor.

#00805	Daynaport E/SEi
#00806	Daynaport E/LC
#03547	Daynaport E/SE
#03548	Daynaport E/II

YOUR CHOICE

\$230**STATUS Mac**

The Professional's Choice for Macintosh Support

INVENTORIES
ASSET TRACKING
TROUBLESHOOTING
SYSTEM 7 TRANSITION
LICENSE COMPLIANCE

PHAROS TECHNOLOGIES

STATUS*Mac 2.0

STATUS*Mac 2.0 is the most complete, flexible system ever designed for remotely gathering comprehensive information about all hardware and software associated with every Mac on your network. You can easily perform network-wide inventories, asset tracking, troubleshooting and software license compliance

verification. Contains System 7 readiness kit. #04157

4158 Status Mac 2.0 Unlimited (limited node license) \$799

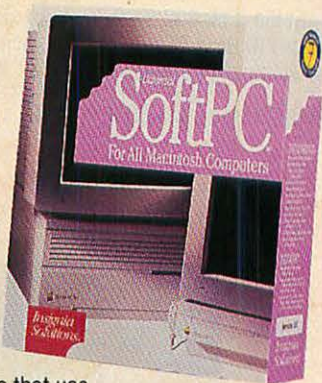
\$299

INSIGNIA SOLUTIONS

Soft PC V2.5

The Soft PC: AT/EGA Module is a power add on that enhances Soft PC's inherent XT compatibility and performance by adding AT capabilities with vibrant EGA color, LIM expanded memory support, and the ability to

run programs that use a math co-processor. #03282
#02506 Soft PC 1.3 \$241

\$123**NOW CONNECT YOUR MACS WITH SHIVA****Net Modem E**

NetModem/E is a stand-alone Ethernet communications device designed to meet three LAN communi-

cations needs. It allows remote workstations to dial in and have full access to network services; lets LAN workstations call out to remote information serviced or hosts; and joins geographically separated networks in a routing connection over ordinary phone lines. NetModem/E supports Macintosh and PC computers on AppleTalk and Novell NetWare networks. NetModem/E switches automatically to accommodate Macs and PCs in each of the three application areas. #04129

\$1749**FastPath V**

Shiva FastPath 5 gateway allows Macintoshes on a LocalTalk network to access Ethernet network systems and services. It also allows Ethernet-based machines to access AppleTalk on a LocalTalk network. Everyone has company-wide access to printing, electronic mail and file servers wherever they're located.

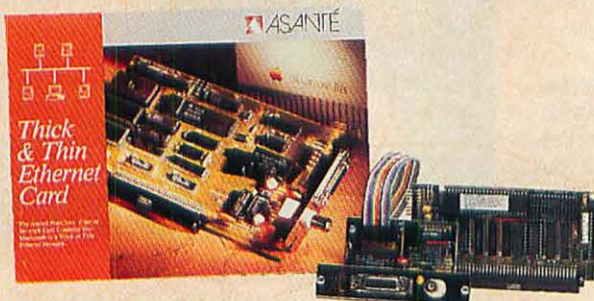
#04038

SHIVA LINE LISTINGS

#04129	Shiva Netmodem/E 10 Base T	1749
#04491	Shiva Netmodem/E Thin	1749
#04758	Shiva Netmodem/E Thick	1749
#04759	Shiva Netmodem/E AUI	1749
#03251	Shiva Netmodem V.32 9600	1149
#01615	Shiva Netmodem V2400	338
#02985	Ethergate	1295
#03726	Ethergate International Version	1295
#04038	Shiva Fast Path V Thick/Thin	1899
#01405	Shiva Netbridge	408
#01406	Shiva Netserial	274
#02542	Shiva Telebridge	408

\$1899

ASANTE ETHERNET PRODUCTS



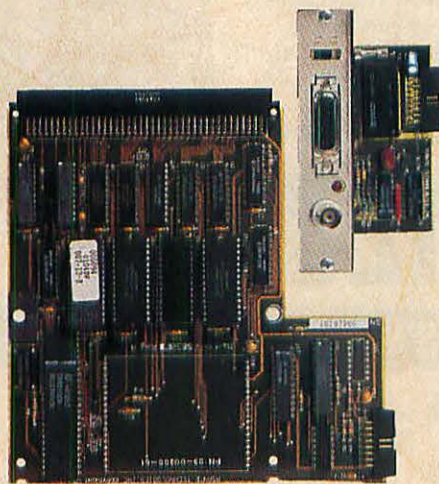
ASANTE

Mac Con +30 IET

Asante Technologies family of Ethernet solutions gives you Macintosh all the right connections. Our MacCon+ network interface cards plug into your Mac to deliver high-performance connectivity that's reliable and cost-effective. MacCon+ ET Series cards support both thick (10 Base 5) and UTP (unshielded twisted pair 10 Base T) media. You get full compatibility with Apple's Ether Talk™ card (at the register level) which allows MacCon+ cards to serve in a wide variety of hardware and software environments. Plus, support for AppleShare®, TOPS, NetWare®, and 3+ Open™ is built in. And all MacCon+ cards comply fully with the IEEE 802.3 Ethernet standard for thick (10 Base 5) and UTP (unshielded twisted pair) (10 Base T) media. #03646

#00020 Mac Con+ 30 IE \$219

\$199



ASANTE

Ethernet Family

Asante Technologies' family of Ethernet solutions gives your Macintosh all the right connections. The MacCon+ network interface cards plug into your Mac to deliver high performance connectivity that's reliable and cost effective.

Thick/Thin Products 10 Base T Products

#03641 MacCon+ II E	\$199	#03885 10 Base T HUB	\$659
#00221 MacCon+ II E64	\$269	#03945 10T MAU	\$99
#00020 MacCon+ 30IE	\$269	#03643 MacCon+ II ET EN	\$249
#03647 MacCon+ 30IE64	\$269	#03642 MacCon+ II ET64	\$254
#03648 MacCon+ SEE	\$199	#03649 MacCon+ SE ET	\$199
#00327 Asante EN/SC	\$339	#03885 10-THUB	\$659



NUVOTECH

NuvoLink SC

Plug the NuvoLink SC into the SCSI port of your Mac, and you can connect to an Ethernet network. The package includes Apple Manager, an Ethernet compatible drive, installation software along with statistical and

diagnostic software to help

manage NuvoLink SC effectively. Front panel indicator shows Power On, configurations, diagnostics and network activity. #03115

#00284 NuvoLink SC-T \$358

\$388

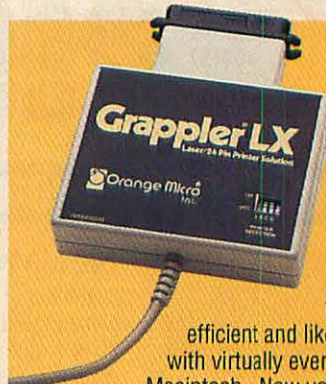
NUVOTECH

NuvoLink II

NuvoLink II is a standard NuBus Ethernet controller card which can be inserted into any Macintosh II series computer. In taking advantage of its NuBus architecture, NuvoLink II offers the Macintosh the greater bandwidth of Ethernet. NuvoLink II adheres to the IEEE standard Ethernet connector specifications. It supports thick and thin Ethernet cable and with a transceiver, standard twisted-pair wire. NuvoLink II is equipped with standard DA 15 connector and a BNC connector to accommodate either cabling scheme. #03119

#04067 NuvoLink II 10 Base T \$189

\$189



ORANGE MICRO

Grappler LX

Open a world of printers for your Mac. The Grappler LX combines high speed performance with years of printer expertise to bring you the best Macintosh interface available. Software improvements make the Grappler more memory

efficient and like other Grapplers, it's compatible with virtually every software package written for Macintosh. Now you

can print Mac documents

on the HP Ink Jet Printer plus laser printers such as the LaserJet, Okidata, Kyocera and Blaser. Grappler cannot print Printscript files.

#03015

Printer Supplies

#1485 Mac 286 V3.0 Single	\$1078
#3562 O.M. 386 16Mhz	\$1678
#59 O.M. 386 20Mhz	\$1838
#230 Orange Peripherals Kit	\$149
#1517 512K Adapter Kit Grappler	\$26
#3564 Grappler Plus	\$77

Cables

#1435 Grappler 9 Pin (C/Mac/Gs)	\$9
#2080 Grappler Mac LS	\$7
#3015 Grappler Mac LX	\$10
#2430 Grappler Spooler	\$4

\$109

The Mac
Zone
Established 1984

ALL U.S. ORDERS INSURED - AT NO EXTRA COST

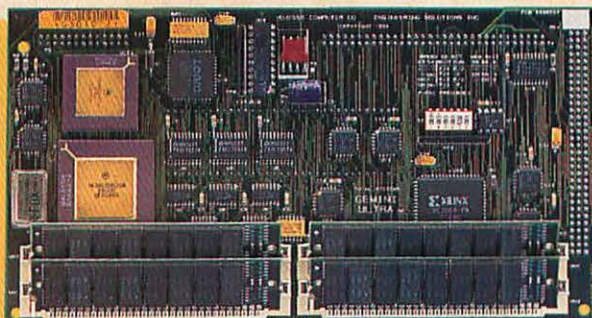
Mercury 030™

TOTAL SYSTEMS devised the low-cost Mercury 030 to deliver reasonable power to people at a rate of their choosing. This well-balanced accelerator card for the Plus and earlier Macintoshes is fast, with 32-bit RAM module for even greater speed, and even faster with the SCSI module added. The modular design keeps costs under your control, letting you add power when you decide you need it. Free VIRTUAL™, free fan and uprated power supply for reliability included. Can accommodate a range of affordable large-screen options. A budget-booster, not a budget-buster!

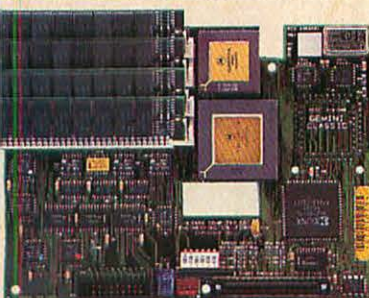
#00034	16MHz with FPU (Plus)	\$649
#00036	16MHz w/o FPU (Plus)	\$498
#00041	16MHz with FPU (SE)	\$449
#00045	16MHz w/o FPU (SE)	\$359

**Gemini Ultra™**

The ultimate accelerator for the SE and earlier Macs from the award-winning Gemini lineage. The formidable, pace-setting Gemini II has been designed from the ground up for more speed, more reliability, easier installation, and 4MB SIMM support for up to 16MB of RAM. Choose from 20MHz, 25MHz, 33MHz, 40MHz 68030 CPU speeds. Burst-mode RAM access adds 15% more speed than equivalent Gemini II configurations. Optional 68882 math coprocessor. 128K, 512K, Plus version includes free high speed SCSI, fan, and power supply; clip-on connector. VIRTUAL is included, free! Now the untouchable leader!

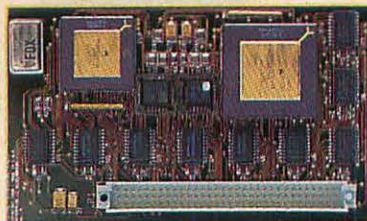


#00541	20MHz	Call	#00532	33MHz	\$1379
#00542	20MHz w/FPU	Call	#00534	33MHz w/FPU	\$1679
#00543	25MHz	Call	#00535	40MHz	\$1479
#00544	25MHz w/FPU	Call	#00536	40MHz w/FPU	\$1849

**Gemini Classic™**

A Classic-Booster takes off! Run up to 100 times faster with the first and ultimate 32-bit accelerator for the Macintosh Classic. Built with the attention to detail that created the award-winning Gemini series of accelerator cards. Choose between 20MHz, 25MHz, 33MHz, 40MHz or 50MHz 68030 CPU. Upgradable between different processor speeds. Optional 68882 math coprocessor and 4Mb or 16Mb of RAM using standard 1Mb or 4Mb SIMMs. Includes special clip-on connector — no soldering required. Auxiliary power supply keeps your Classic cool.

#00527	20MHz	\$949	#00531	33MHz	\$1449
#00528	20MHz w/FPU	\$1049	#00537	33MHz w/FPU	\$1749
#00529	25MHz	\$1179	#00538	40MHz	\$1549
#00530	25MHz w/FPU	\$1349	#00539	40MHz w/FPU	\$1749

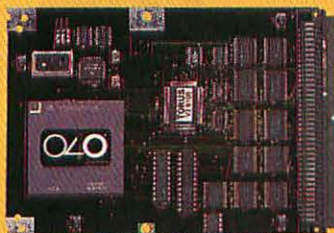
**Enterprise 030™**

Continuing the TOTAL SYSTEMS tradition of innovative, powerful and cost-conscious 68030 accelerator cards, now there's Enterprise 030 for the Macintosh LC. Give your sluggish LC the power it needs to drive that dolor display with the speed you want. This full 32-bit accelerator beefs up standard 68020 with a full-strength 16MHz 68030 CPU. Additional MC68882 floating-point coprocessor is optional. Enterprise 030 is easily installed in minutes into the Processor Direct Slot, and compiles with Apple's power and thermal specifications.

\$609

Magellan 040

PREMIUM 68040 accelerator for the Macintosh SE/30 and IIs! With Magellan you get the jaw-dropping workstation power of a 35MHz 68040 CPU, with PMMU and FPU built-in. SwitchMatic™ technology switches you between 68030 and 68040 in a few clicks — on the fly, no restarts for 68040-finicky applications. High-end graphics, CAD, statistical analysis applications as in other computer-intensive tasks fly past in a blur of speed!



#00293	Board IIFX	\$2195	#00292	Board SE/30	\$1995
#00291	Board IISI	\$1995	#00295	Board 040 IICI	\$2195

RADIUS The Radius Rocket

The Radius Rocket dramatically boosts your Macintosh application performance. Both graphics and calculations are up to 10 times faster. Offering you the first multi-processing NuBus system optimized for high-speed data transfer, Radius Rocket's 68040-based acceleration engine launches your Macintosh beyond the speed performance of a Macintosh IIfx. #04207

\$1799



Cache-In IIfx

Increase performance up to 40%. The 32K cache card is the smallest available, measuring only 1.5" x 4.75", leaving room inside the IIfx for 5.25" hard drives. Best of all, Cache-In was developed and built by Applied Engineering, long a leader in Apple enhancement products. #00289

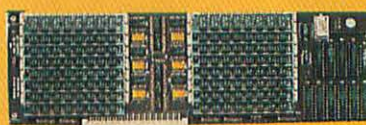


\$194

Cache-In 50

Cache-50 blasts your IIfx's speed beyond the speed of the IIfx! The ultra fast 50MHz 68030 CPU combined with an advanced 64K cache gives your IIfx the power you've been longing for. The board comes complete with a 25MHz 68882 math coprocessor chip for high speed number crunching. One-year warranty. Seat-belt not included. #04072

\$1899



DAYSTAR RAM PowerCard

It's here...cost effective memory expansion on a NuBus card. Just pop in SIMMs and plug it in. The RAM PowerCard gives you room for up to 16 standard SIMMs per card. Multiple cards can be chained for even larger needs. Use it for superfast virtual memory in System 7...as

a lightning fast RAM disk for multimedia imaging or both. Sort up to five times faster! It's the affordable answer for memory upgrades. #03730

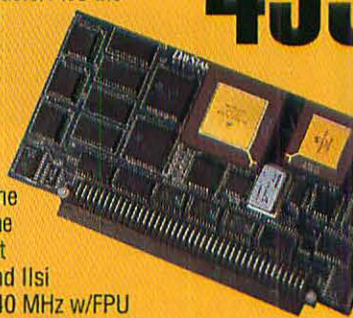
\$499

DAYSTAR Digital PowerCache

The new PowerCache is even faster and is a "universal" performance upgrade. Its innovative design allows for complete transportability from one machine to another. The same card fits in almost

\$1199

any Mac from the LC and IIfx up to the IIfx. #04320 40 MHz w/FPU #04322 50 MHz w/FPU \$1999



DAYSTAR LINE LISTINGS

#02214 LT-200 PC Local Talk Board	\$184	#04323 PowerCache 23 MHz for SE/30, LC, II, IIfx, IIfx, IIfx, IIfx	\$799
#02215 LT-200 MC Local Talk Board	\$295	#04057 PowerCache 40 MHz	\$899
#02877 FastCache IIfx	\$278	#04321 PowerCache 50 MHz	\$1499
#04181 FastCache IIfx	\$309	#03729 SCSI Powercard w/o SIMMS	\$1199
#04183 Dual Port IIfx with no FPU	\$104	#03730 Ram Powercard w/o SIMMS	\$499
#04182 Dual Port IIfx with FPU for SE/30 LC, II, IIfx, IIfx	\$169	FPU is a floating point math co-processor	

ACCELERATE WITH APPLIED ENGINEERING

Cache-In IIfx

Increase performance up to 40%. The 32K cache card is the smallest available, measuring only 1.5" x 4.75", leaving room inside the IIfx for 5.25" hard drives. Best of all, Cache-In was developed and built by Applied Engineering, long a leader in Apple enhancement products. #00289

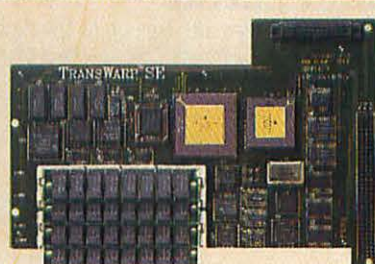


\$194

Cache-In 50

Cache-50 blasts your IIfx's speed beyond the speed of the IIfx! The ultra fast 50MHz 68030 CPU combined with an advanced 64K cache gives your IIfx the power you've been longing for. The board comes complete with a 25MHz 68882 math coprocessor chip for high speed number crunching. One-year warranty. Seat-belt not included. #04072

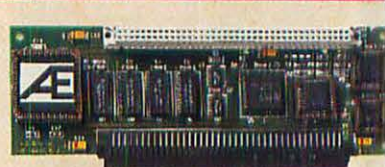
\$1899



TransWarp SE

Accelerate Your SE to Warp Speed. Up to 10 times faster than standard SE! MC68882 Math Chip MC68030—25MHz or 40MHz Standard SIMM Sockets Expansion Connector (for third-party cards) Surface Mount Technology. Full One-Year Warranty. #04325

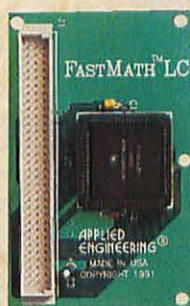
\$799



QuickSilver

QuickSilver gives your IIfx a slot extender cache card and math-coprocessor (optional). The extender enables cards created for the SE/30 to fit neatly inside the IIfx case. The 25ns static RAM cache provides quicker screen refresh, faster scrolling and rapid image manipulation. The 68882-20MHz FPU increases the speed of math-intensive applications. Five year warranty. #04154

\$308



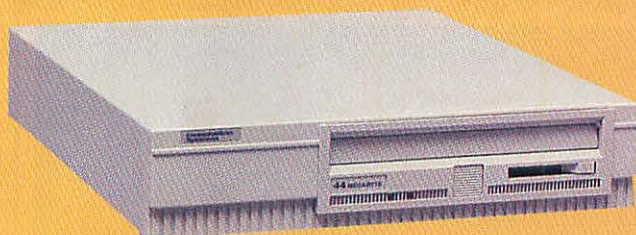
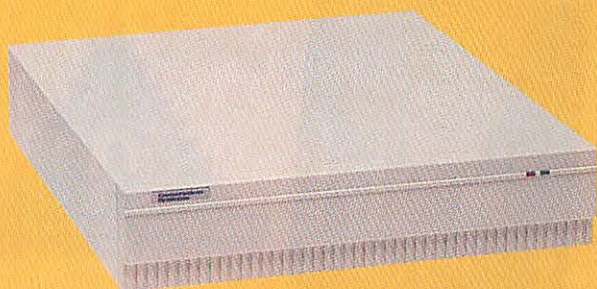
FastMath LC

Make your LC a math whiz with FastMath LC. The card uses a 68882-16MHz FPU to dramatically increase the speed of math intensive applications. FastMath LC plugs easily into the LC's processor direct slot (PDS) with no switches to flip or jumpers to move. Full five year warranty. #04120

\$139

CORPORATE P.O.'S SHIP SAME DAY

The Mac
Zone
Established 1981



GENERATION SYSTEMS

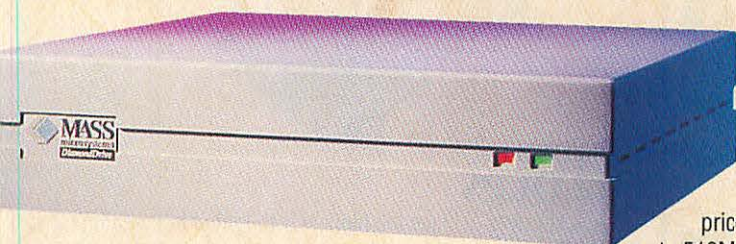
External Hard Drives

Generation Systems' hard drives combine high performance with low prices. Built using only the finest drive mechanisms, each Generation Systems drive is built with attention to the smallest detail. Features include a heavy duty power supply, external termination, external SCSI address switch, dual convenience outlets, and a rugged steel cabinet that fits perfectly under your Macintosh.

#04561 30Mb

#04589 45Mb

\$319 \$599



MASS MICROSYSTEMS

DiamondDrive High-Capacity External Hard Drives

High-capacity and high-performance at an affordable price, DiamondDrives are available in capacities from 120MB to 510MB. With access times as low as 12 msec and 150,000 hour MTBF, each DiamondDrive Utility software provides easy-to-use formatting, volume partitioning and test diagnostics. All DiamondDrives are preformatted, and covered with a two-year warranty and a toll-free 800 technical support line. From the first name in storage.

Diamond Drive 120 (DD120)	\$540	Diamond Drive 320 (DD320)	\$1478
Diamond Drive 210 (DD210)	\$898	Diamond Drive 510 (DD510)	\$2087



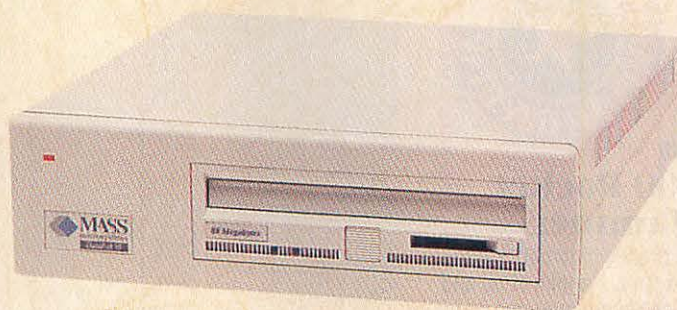
MASS MICROSYSTEMS

DataPak MO 512Mb Removable, Rewritable Optical Drive

The DataPak MO is a high speed read/write/erasable optical drive with 512 megabytes of storage capacity on a removable cartridge, features the fastest disk rotational speed of 3000 rpm and a 64K data cache for fast data access and throughput. A highly reliable system, the DataPak MO features a non-contact laser read/write system that eliminates head crashes and does not deteriorate data over time. Designed to operate on any SCSI-based Macintosh, the DataPak MO is ideal for any application that requires high capacity backup or archiving of files. The drive includes a unique anti-dust filtering system that eliminates head contamination. Each DataPak MO comes bundled with the DiskDoubler data compression utility from Calient. All DataPak MO drives are covered with a one-year warranty and an 800 technical support line. #00177

\$2899

#00164 Optical Cartridge \$208



MASS MICROSYSTEMS

88Mb Removable Cartridge Drives

Voted the best by the industry critics, it's still the first family of removable cartridge drives. With 45 or 88 megabytes on each removable cartridge, they're an inexpensive way to add capacity and backup your valuable data. Actually faster than many fixed hard drives, the DataPak comes with dual SCSI ports, SCSI cable, external terminator, auxiliary AC power outlets, external fuse and surge protection, and built and tested with high quality componentry. PadLock utility software provides password protection and volume partitioning.

#00175 DataPak 45 Meg
(Plus/SE/Classic footprint)

#00176 DataPak IIc
(Mac IIcx/IIci footprint)

#04062 DataPak 88 Meg

**\$649
\$699
\$849**

OPEN 24 HOURS • CALL: 1-800-248-0800

ADVANCED HARDWARE FROM CORE

**Optima - 2 Year Warranty**

The Optima Series consists of external SCSI hard disk drives in capacities of 80, 120, and 200 MB. OPTIMA drives are available for the full line of Macintosh computers—with all the features you need. #04165

#04164 250Mb Optima\$1249

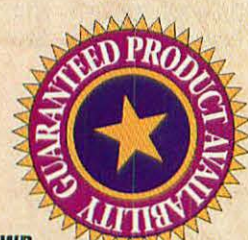
#04166 120Mb Optima\$749

\$599**HC - 5 Year Warranty**

The HC Mac Series consists of SCSI hard disk drives in capacities of 330, 650, 1000 and 1300 Mb. HC Series drives are available for the full line of Macintosh computers—with all the features demanding users require. #04208

#04209 HC 650Mb HD Ext\$2899

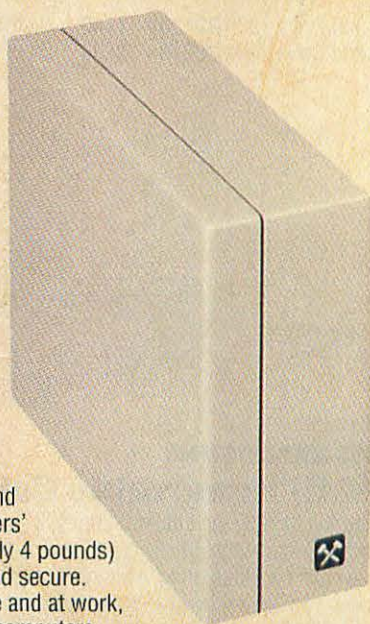
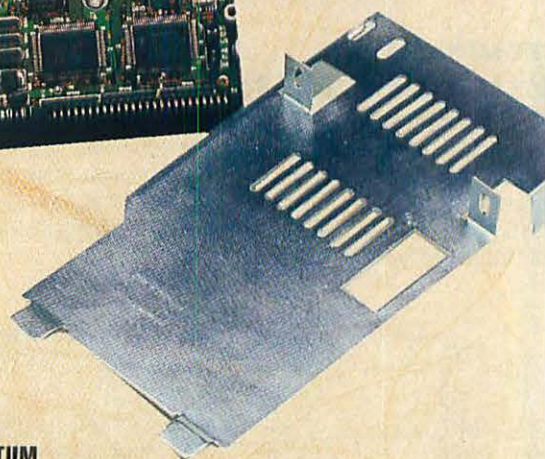
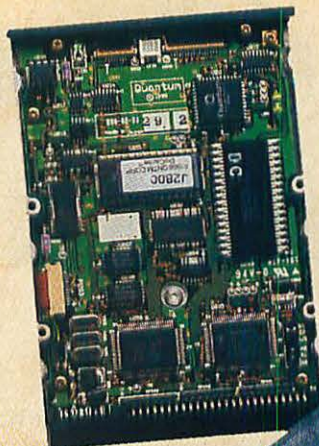
#04210 HC 1000Mb HD Ext\$3995

\$2195

FWB

100 Pocket Hammer

Hammer's high performance and superb engineering and reliability are built into every compact PocketHammer. Shock mounting and intelligent design make them rock-solid and built to last. The PocketHammers' small size and low weight (barely 4 pounds) make them easy to transport and secure. They're the ideal drives at home and at work, for the full range of Macintosh computers. PocketHammer drives cost a little more than average drives because they are in a class by themselves for performance, security, and reliability. Assembled by hand utilizing brushed aircraft aluminum enclosures, PocketHammers function flawlessly in the most demanding environments. For professional users whose data is irreplaceable, the PocketHammer is the only choice. #00506

**\$799****QUANTUM****52 QLPS**

Datapel drives achieve the highest throughput in the industry by using award winning Quantum LPS mechanism and easy to use hard drive formatting software. Our internally mounted disk drive unit will provide quick, reliable mass storage for your Mac II, IIfx, IICx, IICi, or IIfx. #04033

\$329**Quantum Drives**

#00019	Int 105 Mb QLPS Ilic/cx	\$499
#00163	Quantum 210 Mb Int H	\$949
#00405	52 Mb QLPS Ext Hd	\$399
#03683	105 Mb QLPS Ext Hd	\$549
#04225	Int 105 Mb QLPS SE/II	\$499
#04693	52 Mb QLPS Int Ilic	\$329



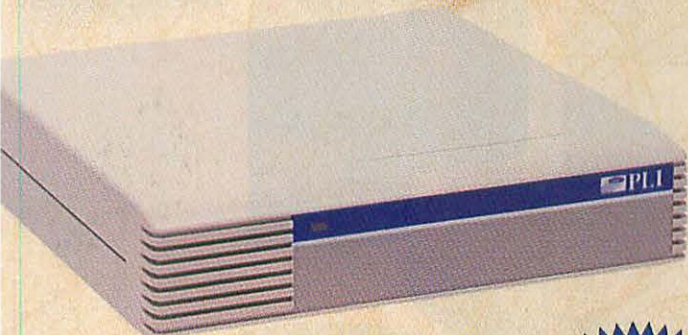
The Mac
Zone
Established 198

ONE STOP SOURCE FOR ALL YOUR MAC NEEDS

Infinity Turbo 88

The Infinity 88 Turbo removable gives you infinite storage potential with the new 88 Mb removable cartridges and with the TurboV-Cache disk accelerator software and TurboBoost, you can achieve near zero effective average access times. #00182

\$839



2 Mb Hard Drive

High Speed Data Storage - PLI's proprietary software includes true 1:1 interleave and provides efficient data transfer speeds 30-300% faster than the competition. Access times are as low as 10.7ms. And using our QuickSCSI NuBus card, you can get burst transfer rates of up to 6MB/sec. No other drive company offers such performance. New Low-Profile Models: PLI also has low profile drives for internal installation in the Macintosh Classic, LC and IIs. Sizes range from 52 to 105MB. PLI hard drives are all fully System 7.0 compatible. That includes partitioning, virtual memory and personal file sharing. #04450



\$499

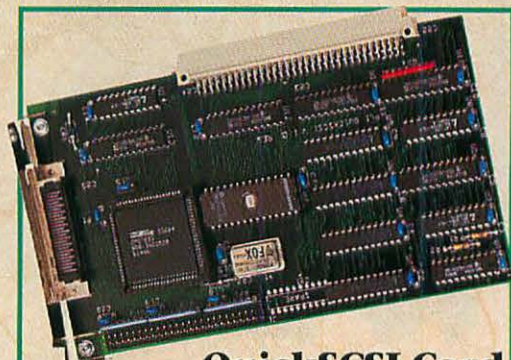


BUREAU OF ELECTRONIC PUBLISHING Pioneer CD ROM Six Pack

Includes U.S. History on CD ROM (\$395), Countries of the World

(\$495), Birds of America (\$99), Shakespeare (\$99), Sherlock Holmes (\$99) and Software Potpourri/Movie Database (\$69). #04345

\$219



QuickSCSI Card

QuickSCSI offers a simple and economical, yet powerful way to eliminate the Macintosh SCSI port bottleneck. It lets your hard drive work at a maximum possible speed by supporting data transfer rates up to 6 Mb/second. The disk cloning option lets you copy the exact contents of one entire drive to another. Run up to 45 SCSI devices simultaneously. #00811

\$399



PLI CD-ROM

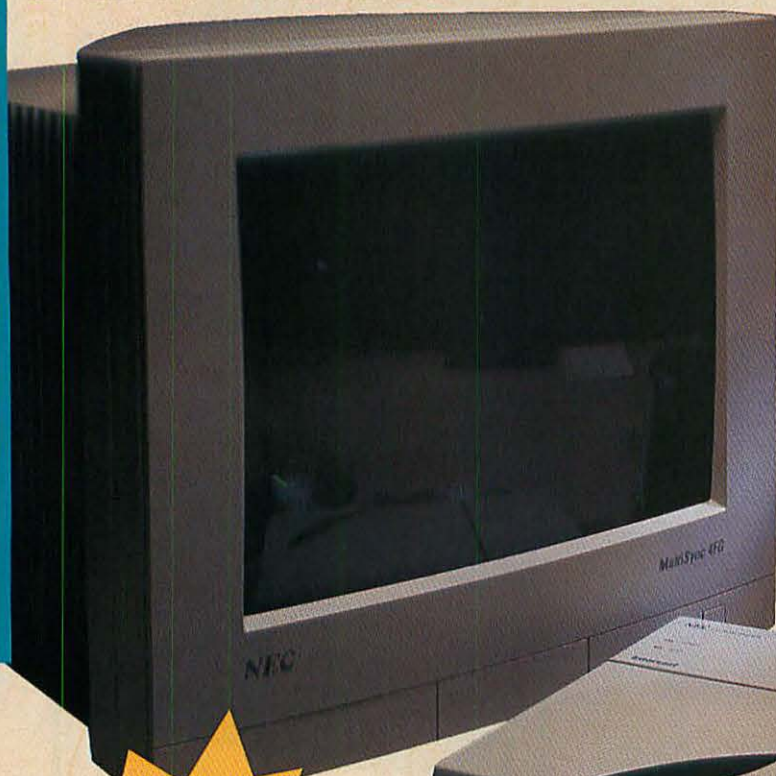
The PLI CD-ROM is the most fully-featured drive available. It has a self-cleaning objective lens, eliminating bothersome dust problems. It offers audio output through a 1/8" headphone jack and two RCA jacks. Volume control for the headphones is provided by a convenient dial on the front panel. PLI software is compatible with virtually every CD-ROM drive on the market, and supports all of the HyperCard audio XCMDs. It also allows channel control on those drives which support it. #03691

\$699

OPEN 24 HOURS • CALL: 1-800-248-0800

NEC

2 YEAR WARRANTY!



**ADDITIONAL
DESERT
STORM
CINDERELLA
BEETHOVEN'S
9TH
COSMIC OSMO
TITLES**

**SAVE
OVER \$1000 ON THE
(RETAIL PRICE) ON THESE
CD TITLES**

\$499

NEC CD Gallery

NEC's CD Gallery™ adds worlds of exciting new capabilities to your Macintosh computer. CD Gallery provides your Macintosh with the ability to display pictures and illustrations, listen to live audio and experience motion graphics. CD Gallery provides you with 7 of today's most popular and innovative interactive CD-ROM software programs. NEC's CD-Gallery includes everything you need to be up and running instantly: from hardware to cables to stereo speakers to seven fun, educational and informative interactive CD software titles. *Monitor not included.* #04133

THIS PACKAGE INCLUDES: CD Drive, 2 Stereo Speakers, 4 Batteries, 3 Original Titles - *Grolier's Encyclopedia, Time Table of History, World Atlas* and 4 NEW Titles - *Desert Storm, Cinderella, Cosmic Ozmo, Beethoven's 9th-CD Companion*

CDR-36 CD ROM TypeGallery Bundle

The most affordable and convenient way to purchase Adobe Post-Script language typefaces. Unlock up to 15 FREE individual typefaces, any 3 of the 210 Adobe typeface families, for immediate access. Unlock additional typefaces easily by calling NEC's toll free number. Save 40-50% vs. Adobe's diskette based Suggested Retail Price. #00077

\$475



CDR-73 CD ROM

CDR-73 CD ROM bundle for extra power. Get fastest access speed at 300 MS.

#00079 CDR-73 with Mac Interface Kit **\$649**

#04301 CDR-73 with CD Gallery **\$739**

Other Great CD ROM Titles

#00085 Clip Art 3D

#00081 Image Gallery

YOUR CHOICE \$245

MAJOR CREDIT CARDS ACCEPTED

**The Mac
Zone**
Established 198

NOW YOU CAN AFFORD LASER QUALITY PRINTING

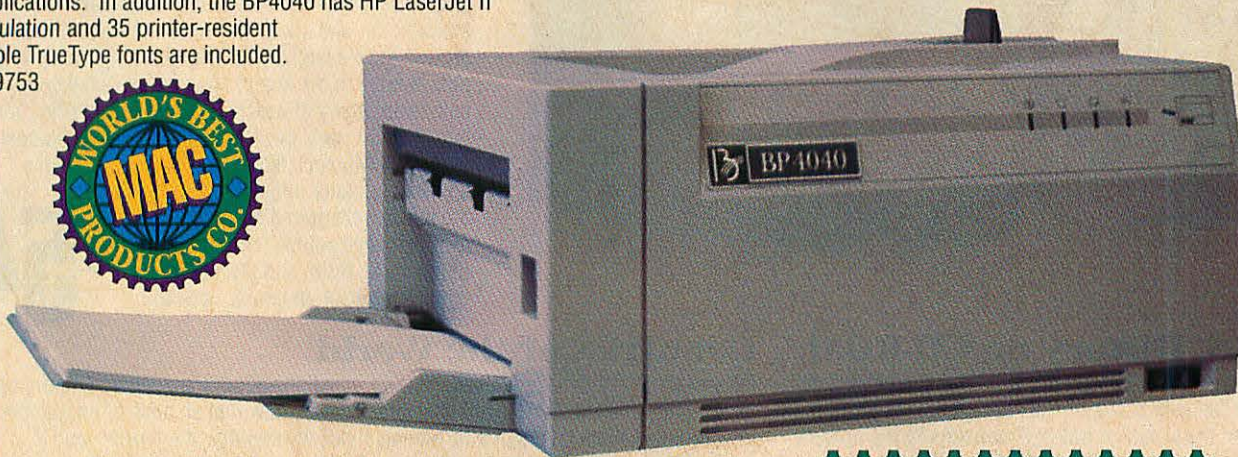
PRINTERS

BEZIER SYSTEMS

BP4040 PostScript Laser Printer

The BP4040 PostScript laser printer features an AMD 29000, 16MHz RISC-based controller that can process full-page images in a fraction of the time required by most other PostScript printers. The BP4040 uses Microsoft's TrueImage page description language, providing superior text and graphics processing capabilities, and is compatible with PostScript applications. In addition, the BP4040 has HP LaserJet II emulation and 35 printer-resident Apple TrueType fonts are included.

#09753



\$1499



PAC MICROELECTRIC

QMS-PS 410

ally - Adobe® PostScript® at an affordable price. Features include:
 Emulation Sensing Processor (ESP) Technology - Allows the QMS-PS
 to recognize data streams and automatically invoke appropriate
 ter language (i.e., PostScript or HP PCL®). Simultaneous
 Surface Operation (SIO) - Allows the QMS-PS 410 to receive data
 on all three of its interfaces simultaneously. Maximize your design
 ability by choosing from 45 licensed, resident Adobe PostScript
 efaces; all scalable from 4 points upward. Our proprietary ASAP™
 echnology (Advance System Architecture for PostScript) and a
 16.67 MHz 68020 microprocessor make this the fastest PostScript printer in its
 class. #04584

1999

TEXAS INSTRUMENTS

microLaser Plus PS17

's award-winning
 microLaser printer is now
 ster than ever, printing a quick 9 pages per
 minute (ppm). We've enhanced the original
 ward-winning microLaser's 6 ppm speed without increasing the
 ice. How did we do it? We added a prefeed command to the
 engine controller that pulls the paper along the paper path before
 ou're ready to print. That means when you send print commands to
 e printer, the paper is already in the paper path, ready to go—
 aving you valuable print time so you can
 et back to work faster. #04096

04313 microLaser Plus PS 35 \$1,699



\$1300



HIGH QUALITY, LOW PRICE



MICROTEK

TrueLaser Printer

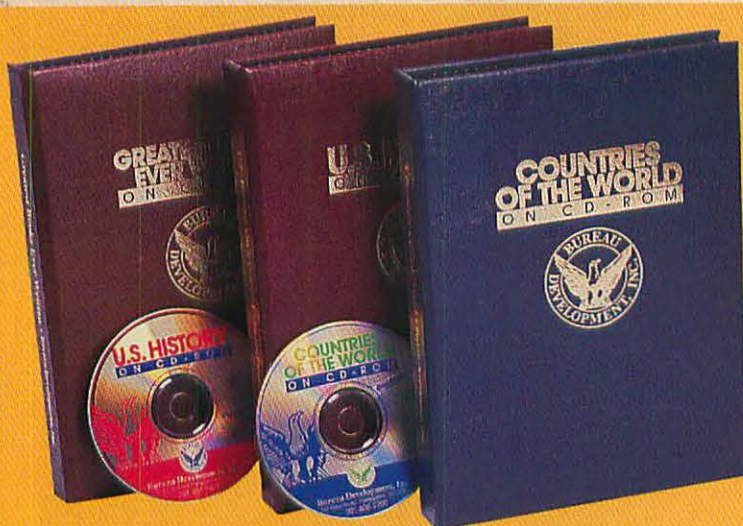
If you're in search of a laser printer that's fast, flexible and simple to use, you've just found it. TrueLaser is the first laser printer that's fully PostScript, TrueImage, and PCL compatible. TrueLaser is also the first printer to come bundled with 35 resident TrueType fonts. Its combination of flexibility, superior speed and sensible price offer an affordable way to make your published work look its best. Six month on-site warranty.

#04047



\$1399

OPEN 24 HOURS • CALL: 1-800-248-0800



BUREAU OF ELECTRONIC PUBLISHING

Monarch Notes

Are you faced with the prospect of a semester's worth of reading in six hours—or just trying to understand the Classics? For years, Simon & Schuster's Monarch Notes series have been a dream come true for students and parents. And with the release of the CD-ROM edition of the Monarch Notes, the full text of the entire collection—over 200 different notes—are available for one low price. No more frantic trips around town searching for the Notes you need, or last minute trips to the library. You can have the entire collection, many of which are no longer in print, for less than 50 cents per Note (single copies can cost \$5!). The Monarch Notes are much more than a shortcut guide to understanding the Classics. They are widely recognized by educators as a definitive source for appreciation of meaning, form, and style of the world's greatest literature. #04467

\$54

U.S. History on CD-ROM

Awarded the 1991 O.P.A. Best Education Product! The full text of 107 books relating to U.S. History—from the arrival of Native Americans to the present—is contained on this single CD-ROM disk. U.S. History on CD-ROM provides detailed coverage from a variety of historical perspectives of U.S. political, social, military and economic history. In addition, the disk includes over 1,000 beautiful VGA photos, maps, and tables of historical events. #04469

\$219

Countries of the World

Go into any major library and ask detailed questions about a particular country or geographic location. The reference librarian will know that an atlas or encyclopedia only includes a few pages of information about the country of interest—and is inadequate for serious research. When you really need detailed information, the best source by far is the U.S. Army's Country Handbook for that particular country. If you're lucky, the library will have the one you need. Now, the entire collection is available on a single CD-ROM, and is supplemented with extraordinary maps, flags, and recorded (not synthesized!) national anthems. #04470

#04468 Greatest Book \$159

\$279

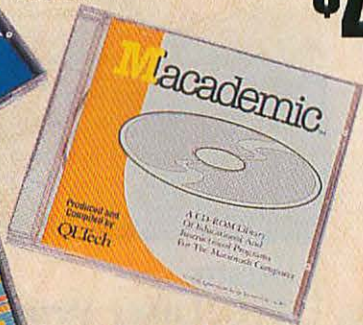
QUANTUM LEAP CD SOFTWARE

CD7- Super Library

15,800 files including art, games, demos and utilities. At over 700 megabytes it's the world's largest non-compressed CD-ROM library.

#00150

\$49



Macademic - Education Library

From anatomy to zoology, art, music, math, science, foreign languages, fun and games, as well as

teacher's help and more. Pre-school through advanced graduate levels. #00151

\$73



\$98

Giga-ROM - Archival Library

The largest collection of Mac software ever assembled on single compact disc, over 11,000 shareware archives in compact format. Indexed with On Location for super-fast search and retrieval. #00152



TACTIC SOFTWARE

Multi-Media CD

If you design, create, draw, publish, or compose, then TACTIC Software has a great value for you. The TACTIC Multi-Media CD (MMCD) is a collection of the award-winning products Sound Clips, ArtClips, and ArtFor.

\$149

#04219

The Mac
Zone
Established 1986

AGFA PUTS A NEW SPIN ON CD-ROM—POSTSCRIPT® FONTS, TRUEType™ FONTS, AND MORE.

AGFA TYPE

The latest twist on fonts is the AgfaType™ CD-ROM V3.0. It's what type on CD should be—the widest selection of fonts and typographic software plus a powerful set of *free* features.

Agfa made the new CD with the type-savvy user in mind. You can choose fonts in the format you want—PostScript from Adobe® or TrueType from Apple®.

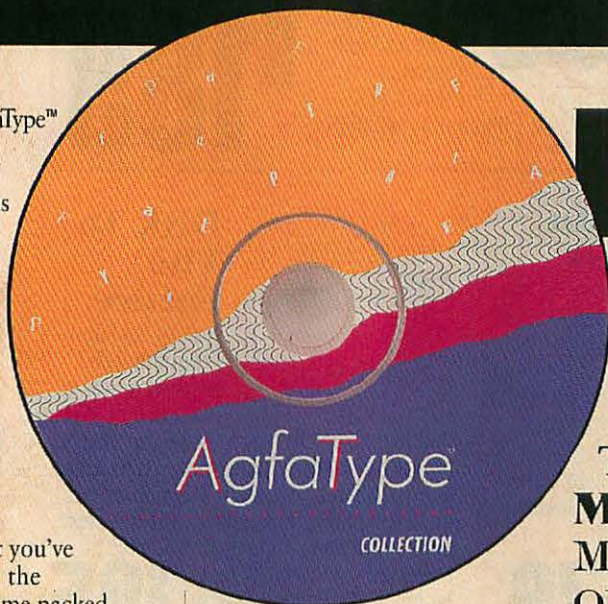
There's over 1,900 POSTSCRIPT fonts—all compatible with ATM®—including the Adobe type library encoded on the disc.

And, we've added the features that you've asked for—features found only on the AgfaType CD-ROM. Your fonts come packed with an on-line electronic catalogue, a new multimedia typography tutorial, the complete collection of screen fonts, the latest shareware, and future upgrades—*free*.

The new interface lets you browse, learn about, select, and then quickly install additional fonts. Choose individual typefaces. There's no waiting for a shipment to arrive—your fonts can be added in minutes with a simple phone call.

Agfa believes that type on CD should give you more choices, more features, and more value. To help convince you, we've included Garth Graphic®, a classic typeface, absolutely *free*.

Nothing in the industry can compare with the AgfaType™ CD-ROM V3.0. To take it for a spin, call us today at 1-800-248-0800.



\$61

Get the AgfaType CD-ROM V3.0 with 20 exclusive Agfa headline faces unlocked plus a Pi and Symbols font of your choice. An \$830 retail value.

Order No. 00326

TC Jasper
Metropolis
Modern Twenty
ORLANDO
Quirinus Bold
Siena Black
SECTION BOLD CONDENSED
Stratford Bold
PL Tower Condensed
PL Westervelt
WOODBLOCK

PL Behemoth
Semi-Condensed
PL Benguiat Frisky
Beton Extra Bold
Bernhard Modern
PL Davison
Americana
Egiziano Black
TC Europa Bold
PL Futura Maxi Light
PL Futura Maxi Demi



Choose from 126 exclusive Agfa Pi and Symbols fonts

\$249

Current AgfaType CD-ROM users! Order any 8 PostScript faces of your choice and receive any 4 Studio Series faces free! A \$600 value. To order, or for details, call 1-800-248-0800.

Order No. 04352



\$689

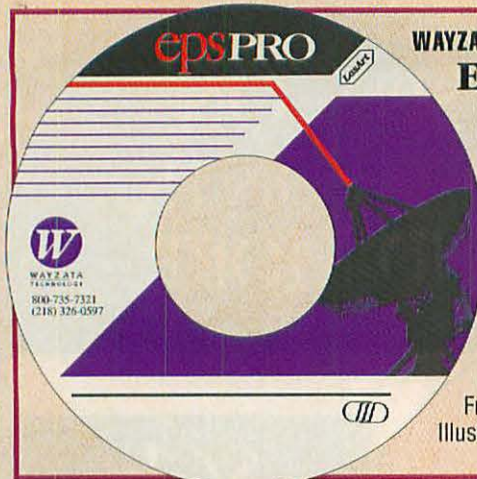
Get a Toshiba TXM3301 drive, the AgfaType CD-ROM with 20 Agfa headline faces unlocked, plus a Pi and Symbols font. A \$1,920 value.

Order No. 00381

AGFA

Circle 70 on reader service card

OPEN 24 HOURS • CALL: 1-800-248-0800



WAYZATA

EPS Professional

EPS Professional is the disc you have been waiting for! It is ideal for desktop publishing; it has over 700 high-quality, fully resizable, Encapsulated Postscript images. The disc also has more than 100 decorative borders.

All Wayzata photography and clip art CD-ROMs have unlimited reproduction rights. You may also edit images in FreeHand or Illustrator. #04043

\$189**BBS In A Box**

BBS in a Box is the first CD ever produced for the Macintosh BBS that provides over 7,000

Macintosh files in compressed format with BBS directories for BBS or personal use. These directories are provided on eighteen topics including Art, Business, DA's, Games, Films, Newsletter Articles, HyperCard, Music, MIDI, Mac II, Voices, Telecommunications, Utilities, Word Processing and more! #00241

\$78**Disk To The Future**

Disk to the Future - Programmer's Reference is a collection of over

250 megabytes of source code and utilities for the Macintosh programmer. It includes 4.2 megabytes of System 7 examples. It includes a full-text database of the source code contained on the disc. The disc is accessed using TextWare, a high speed database search and retrieval engine. #03507

\$85

The Washington Times

Insight

ON THE NEWS

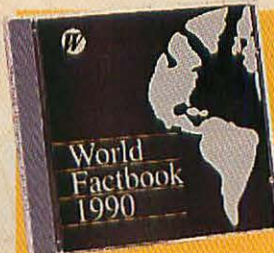
The Washington Times and Insight on the News CD-ROM brings you the power of Front Page news with an editorial twist. Wayzata has captured both the Washington Times and Insight on the News on a single full text CD-ROM. With the Washington Times you obtain national news plus the inside track on political happenings. You not only receive the headline articles, but also Commentary, Money, Sports, Weather, and more! This disc covers June 1989 to June 1991. #04044

\$94**Front Page News**

This revolutionary research tool includes the full text of over 10

U.S. and international based wire services and news sources - over

200,000 news articles. These are the same news sources used by newspapers world-wide. #00472

\$89

Government. It includes extensive examinations of territories, countries, protectorates, and disputed land claims world-wide. #03509

\$78**World Fact Book**

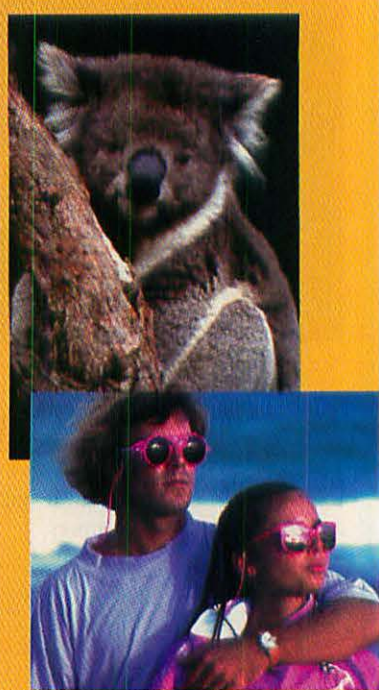
The World Fact Book is often called the World Almanac of the Federal

GAIA Environmental Resource

The GAIA environmental resource CD-ROM is oriented toward all who need graphics (clip-art) and reference materials dealing with ecology and nature subjects.

The disc contains:
Over 500

original high resolution images in PICT format, plus color and monochrome TIFF versions. #04565

\$149**photoBANK Vol. 1**

photoBANK has over 500 MB of high-resolution color photographs never published before. Each photograph is available in 3 formats:

- 24 bit PICT (1285 x 886 Pixel)
- 24 bit PICT (640 x 480 Pixel)
- 8 bit PICT (640 x 480 Pixel)

\$114

The Mac
Zone
Established 1980

COMPILED BY ERFERT FENTON

THIS INDEX COVERS THE 12 ISSUES OF MACWORLD PUBLISHED DURING 1991. IT LISTS MOST PRODUCTS ALPHABETICALLY AND UNDER SUBJECT HEADINGS. BOLDFACE PAGE NUMBERS INDICATE A MAJOR REFERENCE.

3 In Three, May 195, Dec 152
4th Dimension, Feb 184
FrameMaker link, Dec 18
911 Utilities, Mar 130

A

A4, Nov 186
Abaton LaserScript printer, May 142
Abaton Scan 300/GS scanner, Oct 146
About Cows, Dec 192
Accel-a-Writer II printer, Dec 156
Accountant, Inc., Nov 186
Accounting, Nov 186
MasterPlan, Jun 101
M.Y.O.B., Oct 193
personal finance programs, Mar 152
Quicken, Dec 181
ACCPAC Simply Accounting for the Macintosh, Nov 186
AccuText OCR, Nov 171
Active Document, May 103
Active Memory, Nov 18
Address books, Apr 178
customizing, Oct 227
InTouch, May 183
MacPhonebook, Sep 239
TouchBase, Sep 233
AddressWriter, Apr 99
Administrator's Aid, Feb 152
Adobe Illustrator, Feb 196
Insights, Oct 233
Adobe Photoshop, Jan 144, Apr 144, Jul 23, Sep 135, 248, Nov 291
shrink window to size of picture, Aug 192
trapping, May 159
Adobe Type Manager, May 152
Adobe Type Reunion, May 152
AdSpeed, Sep 129
Advanced Security, Jun 122
Adventures of Willie Beamish, The, Sep 20
After Dark, Mar 130, May 195, 218
More After Dark, Volume One, Dec 184
Afternoon, a story, Jan 218
AgentDA, Nov 261
Agfa Focus II GSE scanner, Oct 146
Agfa Focus Color Scanner, Jun 130
AgreeMentor, Jan 218
Air Mouse, Feb 18
Alarming Events, Nov 261
Alchemy, Feb 160
Aldus Digital Darkroom, Sep 226
Aldus FreeHand, Feb 113, Aug 148, Dec 17
avoiding color banding, Jan 231
training, Dec 199
Aldus PageMaker, Feb 142, 184, Dec 17
Aldus Additions, Jul 165
Aldus PrePrint, Jan 195
CheckList, Jan 18
DataShaper, Jan 18
editing rotated text, May 34
on small screen, Nov 289
proofing spot-color text, Feb 270
resetting ruler's zero point, Jul 264
scripting language, Jul 165
Table Editor, Sep 19
text-alignment tip, Jan 235
threading elements, Aug 191
training, Dec 199
Aldus PrePrint, Jan 195
Aldus SuperCard, Nov 194
Alge-Blaster Plus, Apr 177
Algebra Homework Tutor, Apr 177
Alliance APS-45R removable-cartridge drive, May 124
Alliance Drive hard drive, Mar 136
Amazing Paint, Jan 184

A.M.E., Feb 152, May 172, Jun 122, Sep 20
American Heritage Electronic Dictionary, The, Oct 156
Andean World, The, Apr 124
Andrew Tobias' Managing Your Money, Mar 152
Animation
Animation Works, Sep 208
ElectricImage, Dec 181
FilmMaker, Mar 160
Life Forms, Oct 97
Sculpt 4D, Nov 151
Animation Works, Sep 208
Aperture Network & Resource Manager, Feb 152
AppDisk, Oct 197
Apple 12" Monochrome monitor, May 132
AppleCD SC drive dust problems, Nov 17
AppleColor High-Resolution RGB Monitor, Oct 114
Apple Computer
Apple Europe, May 87
Apple Pacific, Dec 91
Apple-IBM alliance, Sep 19, Oct 25, 55, Nov 149, Dec 17
commentary, Feb 23, May 69, Sep 168, 176, Dec 119
Customer Assistance Center, Jan 17, Apr 191
Apple Hard Disk SC, Mar 136, Sep 184
Apple Macintosh 12" RGB Display, Oct 114
Apple MIDI Interface, Jun 146
Apple OneScanner, Dec 109
Apple Portrait Display, May 132
Apple Scanner, Oct 146
AppleShare, Dec 119
AppleShare Print Server, Feb 152
AppleTalk Internet Router, Apr 130
AppleTalk Remote Access, Dec 113
Apple Two-Page Monochrome monitor, May 132
APS 330 Runner hard

drive, Jul 184
APS hard drive, Sep 184
APS Teac 155 and 600 tape drives, Nov 176
ArcView, Sep 139
Artificial life, May 43
Asante EN/SC, Apr 130
Ask It, Jan 215
Assistant Controller
Accounting Series, Nov 186
Astrix, Feb 239
Asuka NuScan Color and NuScan Gray handheld scanners, Jun 154
ATF Type Designer I, May 18, Aug 122
Athena hard drive, Sep 184
Atlas GIS, Jan 107
ATM, May 152
atOnce, Nov 186
At Risk, Sep 20
@Risk, Sep 20
At Your Service, Nov 246
Audiomedia board, Feb 160
Authorware Professional, Nov 194
AutoCAD for the Macintosh, Aug 34
AutoMac, Jul 39
AutoMac III, Apr 138
Avid/1 Media Composer, Feb 178
AVR 3000/CL Plus scanner, Jun 130
AVR 3000/GS Plus scanner, Oct 146
Aware Corporate General Ledger, Nov 186

B

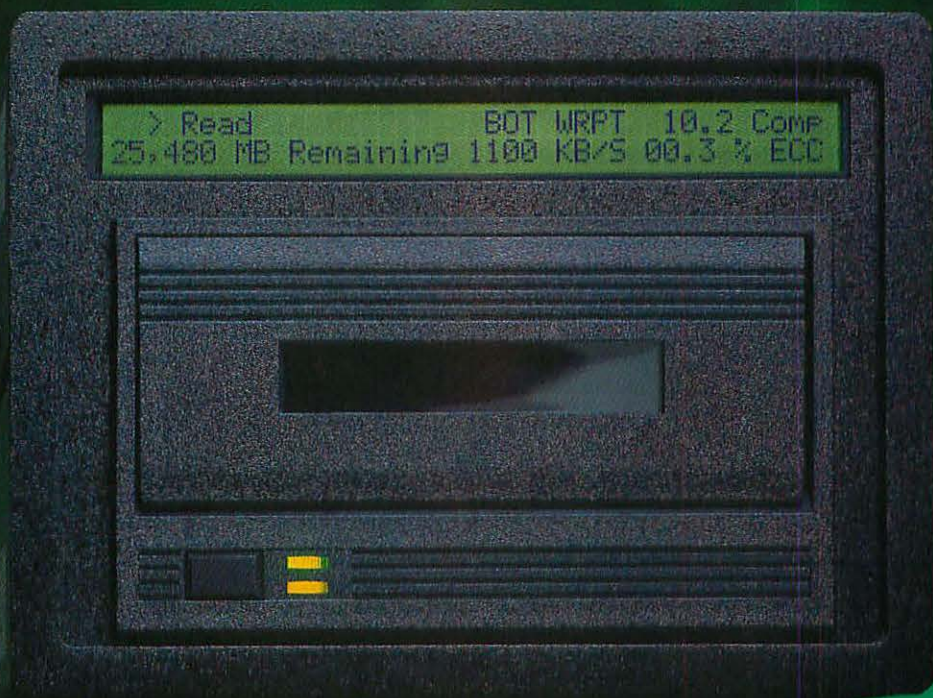
Backup programs, Mar 130
DiskFit, Jul 228
DiskFit Pro, Nov 18, Dec 17
MacBack 8000, Mar 171
Network DiskFit, Jul 228
Baker's Dozen, Jan 77
Ballet Tutor, Apr 124
BannerMania, May 185
Baobab Individual Learning Courses, Aug 171, Dec 199
Bayshore Blast, Apr 124
BBSs. See Online services
BeagleWorks, Oct 19, Nov 163
Beaker, Nov 257
Bernoulli 90 removable-

cartridge drive, Oct 93
Bernoulli series removable-cartridge drives, May 124, Jun 18
Bernoulli Transportable 90 removable-cartridge drive, Feb 234, Dec 190
Bible references, Dec 186
Billiards, Jan 77
Bioshield, Jan 17
Bird Anatomy II, Apr 124
Birds of America, Sep 256
BLP Elite printer, Nov 226
Boards
accelerators, Jul 176, 210
Apple II emulation board for Macintosh LC, Jul 18
Audiomedia, Feb 160
cache, Jul 176
color display, Jan 152
ColorServer display, Jan 18
ColorSnap 32+ video capture, Oct 164
Compression Master, Jan 115
digital audio, Feb 160
display, Feb 119
DisplayServer Classic, LC, and IIsi display, Jan 18
DoubleUp compression, Apr 95
DVA-4000/Macintosh video, Sep 206
E-Machines XL8 and Futura/24 graphics/accelerator, Oct 97
Ethernet, Apr 130
Ethernet LC Card and Ethernet NB Card, Mar 105
Ether TnT and TwT series Ethernet, Jul 18
FPU upgrades, Jul 176
graphics accelerators, Jan 136
graphics boards problems in Macintosh IIsi, Mar 103
Hydra One, May 107
Kodak color space translation/accelerator, Sep 19
MacCon+ 30i Ethernet, Jan 109
MacCon+30i/Radii Ethernet/color, Sep 19
Macintosh IIsi Cache Card, Jun 17
MaraThon 030 Classic upgrade, Jan 17, Feb 119
MegaGraphics multifunction display adapter, Feb 127
Mobius One Page 030 Display, Feb 17
PageBlaster PostScript rasterizer, Apr 99
PowerCache accelerator, Dec 117
PrecisionColor 8X and 24X NuBus graphics adapters, Nov 153, Dec 115
QuickImage 24 video capture, Oct 164
QuickView Studio video, May 107
Radius 68040 accelerator, Apr 17
Radius Pivot IIsi Interface and Two Page Display IIsi Interface, Feb 119
Radius Rocket accelerator, Dec 167
RasterOps 24si color/accelerator, May 111
RasterOps 24STV video, May 111
RasterOps display, Feb 119
Sigma Bullet 3040 compression, Apr 95
Sound Accelerator, Feb 160
Spectrum/8 LC and Spectrum/8 si display, Jun 17, Jul 155
Thunder/8 and Thunder/24 graphics/accelerator, Oct 19
TokaMac LC 68040 accelerator, Apr 17, Dec 167
TokaMac SX and CI accelerators, Dec 167
upgrades, Apr 197, Jul 176
video capture, Feb 23, 178
Book of MIDI, The, Apr 124
Books, Jul 141
Introduction to Digital Color Prepress, An, Jan 231
Technical Introduction to the Macintosh Family, Jul 264
Boomerang, Jan 77
continues

- BrainMaker, Oct 95
 Brother HL-BPS printer, Dec 156
 Bubble Help for HyperCard, Apr 124
 Business Color System monitor, Oct 114
 Business LaserPrinter IIS, Feb 200
 Business Sense, Nov 186
- C**
- Cabletron Systems E series Ethernet connectors, Apr 130
 CA-Cricket Draw, Jan 42
 CAD
 AutoCAD for the Macintosh, Aug 34
 Canvas, Apr 101
 MacDraw Pro, Feb 119, Nov 228
 MiniCad+, Jul 231
 ModelShop, Feb 18
 CAD/CAM, Dec 29
 Calculator, Jan 237
 Calendar, Nov 261
 CalenDar, Nov 261
 Calendar Creator, Nov 261
 CalendarMaker, Nov 261
 Calendar programs, Nov 261
 CAM, Dec 29
 Camouflage, Jun 122
 Canfield, Jan 77
 Canon IX-30F scanner, Oct 146
 Canvas, Feb 18, Apr 101
 Carbon Copy Mac, Jun 105
 Cataloger, Feb 240
 cc:Mail, Jun 17
 CD Companion Series: Igor Stravinsky: The Rite of Spring, Aug 162
 CD ROM
 About Cows, Dec 192
 American Heritage Electronic Dictionary, The, Oct 156
 AppleCD SC drive dust problems, Nov 17
 CD Companion Series: Igor Stravinsky: The Rite of Spring, Aug 162
 Chinon America CDA-431 CD ROM Drive, Oct 184
 encyclopedias, May 168
 Intersect CDR-36 and CDR-73 CD ROM drives, Jun 17
 MacSPIRS, Jun 177
 multimedia, Sep 255
 NEC CDR-72 CD ROM drive problems, Nov 17
 PLI CD-ROM drive, Oct 184
 Spaceship Warlock, Sep 129, Oct 180, Dec 152
 Terrorist Group Profiles, Dec 152
 Toshiba America TXM-3300A CD ROM drive, Jul 17
 yearbook, Apr 101
 Champion for the Mac, Nov 186
 Charts. See Graphs
 CheckFree, Mar 152
 CheckList, Jan 18
- CheckWriter II, Mar 152
 Cheshire, Mar 177
 Chicago font symbols, Nov 278
 Chinon America CDA-431 CD ROM Drive, Oct 184
 Chinon America DS-3000 Color Scanner, Nov 242
 Circuit design, Electronic Workbench, Nov 259
 Cirrus hard drive, Mar 136, Sep 184
 Citadel, Sep 20
 ClarisWorks, Nov 163
 Cleaning Macintosh interior, Jun 209
 ClearView/LC Monochrome Display System, Feb 119
 ClearVue/II, SE, XL monitors, May 132
 ClearVue/GS monitor, May 132
 ClickChange, Feb 222, Jun 219
 Clip art
 Quality Artware, Feb 240
 Southwest Collection, Aug 172
 Clipboard, Jan 237
 bypassing, Feb 117
 Clones, Macintosh, Apr 116, Aug 32, 33
 Heat Seeker II, Nov 167
 Club Mac Hard Disk, Mar 136
 Club Mac Q series hard drives, Sep 184
 Club Mac SyQuest 45 removable-cartridge drive, May 124
 CMS Enhancements TS60 and TS150 tape drives, Nov 176
 Cobra hard drive, Mar 136, Sep 184
 Cobra series high-capacity hard drives, Jul 184
 CodeCheck, Nov 240
 Colby ClassMate portable, Sep 141
 Color, Jan 83
 24-bit monitors, Jan 152
 avoiding banding, Jan 231
 color matching, Feb 103
 CorrectColor Calibrator, Jul 153
 graphics accelerators, Jan 136
 Kodak color space translation/accelerator, Sep 19
 paint programs, Apr 144
 PhotoYCC standard, Feb 129
 prepress, Jan 231, Jul 23, Oct 138
 printers, Feb 168
 proofing spot-color text, Feb 270
 ColorBoard 208, 264, and 364 video boards, Feb 178
 ColorCapture video capture board, Feb 178
 ColorDex, Aug 171
 Color MacCheese, Apr 144
 Colomate PS Model 40 printer, May 17
 Colomate PS printer, Feb 168
 ColorMax 8/24 Display Adapter board, Jan 152
 ColorMax 8/24 Display System, Oct 114
 ColorPage E16 monitor, Oct 97
 ColorPage T16 monitor, Oct 114
 ColorPoint PS printer, Feb 168
 ColorPoint PSX printer, Nov 18
 ColorQuick Ink-Jet Printer, Feb 168
 ColorScript 100 Model 10, 20, and 30 printers, Feb 168
 Color separation, Jan 231, Jul 23, Oct 138
 ColorServer display board, Jan 18
 ColorSnap 32 video capture board, Feb 178
 ColorSnap 32+ video capture board, Feb 178, Oct 164
 ColorSpace FX, III, and Plus/SE video boards, Feb 178
 ColorSqueeze, Jul 18
 ColorStudio, Jan 144, Apr 144, Sep 135
 Commander EIS, Jan 113
 Communications. See also E-mail; Fax modems; Modems; Networks; Online services
 AppleTalk Remote Access, Dec 113
 Carbon Copy Mac, Jun 105
 DoubleTalk, Apr 18
 GlobalGate, Dec 17
 Inform, Nov 151
 Instant Update, Nov 151
 Macintosh-IBM mainframe, Nov 253
 MicroPhone II, Feb 17
 SimMac, Nov 253
 Timbuktu, Jun 23, 105
 Timbuktu/Remote Access Pack, Feb 204
 WPduet, Feb 224
 Zterm, Jan 77
 Compactor, Jan 77
 Compact Pro, Oct 197
 Complete Half-Page Scanner, The, Jun 154
 Components, Nov 186
 Comport fax modem, Aug 114
 Compression, Jan 17, 128, Jul 23
 ColorSqueeze, Jul 18
 Compactor, Jan 77
 Compact Pro, Oct 197
 Compression Master board, Jan 115
 Crush, Dec 18
 DoubleUp board, Apr 95
 Impressit, Jun 23
 MPEG, Jun 18
 Stuffit, Jan 235
 Stuffit Deluxe, Jul 222
 SuperDisk, Apr 18
 Compression Master board, Jan 115
 Computer-aided design.
- See CAD
 ComputerEyes and ComputerEyes Professional, Feb 178
 Computerized Classic Accounting, Nov 186
 Comstation Four fax modem, Dec 18
 ComTalk, Apr 130
 Concorde 635 and 1050 hard drives, Jul 184
 Connected Accounting, Nov 186
 Conquest of the Long Bow—The Legend of Robin Hood, Sep 20
 Consumer law, May 63
 ControlTower, Nov 159
 Conversion DA, Jan 77
 Convertit, May 192
 Copyrighted material, use of, Feb 23, May 31
 CorrectColor Calibrator, Jul 153
 Correct Grammar for the Macintosh, Aug 138
 Cosmic Osmo, Apr 124
 Course Builder, Nov 194
 Cranel 1G hard drive, Jul 184
 Critters, Jan 77
 Crop marks, Oct 212
 Crush, Dec 18
 Crystal Ball, Jul 226
 CrystalPrint Express and CrystalPrint Publisher II printers, Dec 156
 CrystalPrint Publisher printer, Jan 42
 Customer support, Sep 95
 Cutting Edge 20 Trinitron 8-Bit Color Monitor, Oct 114
 Cutting Edge 45MB Removable Cartridge Drive, May 124
 Cutting Edge 330MB F/H and 660MB F/H Wren Runner hard drives, Jul 184
 Cutting Edge hard drive, Sep 184
 Cypress FaxPro fax modem, Aug 114
- D**
- Dancing Mouse, The, Apr 124
 Darwin's Dilemma, Jan 203
 Databases
 ACIUS database server, Apr 17
 customizing, Oct 227
 FileMaker, Apr 191, Jun 204, Sep 272
 FileMaker Pro, Feb 184, 226, Mar 219, Aug 171, Oct 212, 227
 FoxPro/Mac, Apr 103
 HOPS, Apr 97
 mapping programs, Jun 175
 MyAdvancedDatabase, Sep 242
 Panorama II, Aug 85
 publishing, Feb 184
 Selectics, Dec 117
 Serious Business, Jan 103
 Databases, 4th Dimension, Feb 184
 Data Description, Oct 95
 Data Desk, Oct 95
 Data Discman, May 23, Aug 32
 DataFrame XP hard drive, Mar 136
 DataLink LC fax modem, Aug 114
 DataLink/Mac fax modem, May 174
 DataPak 88 series removable-cartridge drives, Jun 101
 DataPakMO erasable optical drive, Jun 138
 DataPak series removable-cartridge drives, May 124
 Dataproducts LZR 1260i printer, Dec 156
 Data-recovery services, Jun 18, Dec 73
 DataShaper, Jan 18, Feb 184
 DataStar removable-cartridge drive, May 124
 Data Translation DT2879-60Hz video board, Feb 178
 DaynaPort E series Ethernet connectors, Apr 130
 Deck, Feb 160, Apr 156
 DeltaGraph Professional, Sep 19
 Deltaic Server 320H hard drive, Jul 184
 Deltaic Server hard drive, Sep 184
 DeluxeRecorder, Jun 146
 Descartes, Jun 175
 Desert Storm: The War in the Persian Gulf, Sep 255
 Designer/8 20" Color Display System, Oct 114
 DesignScript, Feb 184
 DesignStudio, Feb 184, Jun 18, Nov 212
 reading small text, Jul 266
 Desk, Jan 209
 Desk accessories, Jan 237
 installing under System 7, Nov 278
 DeskPaint & DeskDraw, Apr 144
 Desktop, Jan 231, Apr 192, May 211
 Desktop file, rebuilding on floppies, Jul 264
 Desktop publishing. See also Aldus PageMaker; Fonts; Prepress; QuarkXPress
 4th Dimension-FrameMaker link, Dec 18
 Aldus PrePrint, Jan 195
 communications links, Jun 23
 creating crop marks, Oct 212
 DesignStudio, Feb 184, Jun 18, Jul 266, Nov 212
 database publishing, Feb 184
 FrameMaker, Jan 180, May 17, Dec 18
 Interleaf, May 103
- Introduction to Digital Color Prepress, An, Jan 231
 Page Director, May 170
 Personal Press, Aug 159
 Publish-It Easy, Oct 20
 RagTime, Jun 18
 trapping, May 159, Aug 31, Sep 55
 Ventura Publisher, Jun 170
 WysiWord, Nov 163
 Dialog boxes, clicking radio buttons in, Mar 200
 Dialoger Professional, Apr 124
 Dictionary of the Living World, Sep 255
 Diery, Ian, interview, Dec 91
 DigiMatic, Jul 149
 Digitizers. See Scanners
 DigiVideo and DigiVideo Color video boards, Feb 178
 DirectColor/24 display board, Jan 152
 DirectColor/GX accelerator board, Jan 136
 DirectDrive hard drive, Mar 136, Sep 184
 DirectDrive Portable hard drive, Sep 184
 Disabled, products for, Jun 91
 Disinfectant, Jan 77, Mar 130, Apr 192
 Disk Accessory Plus, Apr 178
 Disk drives, floppy. See also Erasable optical drives; Hard drives; Removable-cartridge drives
 SuperDrive, Sep 269
 TrackMate cleaning system, Feb 240
 DiskExpress, Mar 130
 DiskExpress II, Jul 18
 Disk First Aid, Feb 263
 DiskFit, Mar 130, Jul 228
 DiskFit Pro, Nov 18, Dec 17
 DiskLock, Jun 122
 DiskKover 45R removable-cartridge drive, May 124
 DiskKover 250T and 525T tape drives, Nov 176
 DiskKover 325 hard drive, Jul 184
 DiskKover hard drive, Mar 136
 Disks. See Floppy disks; Hard drives
 DiskTop, Mar 130
 Display Net, Apr 124
 Displays. See Monitors
 DisplayServer Classic, L.C., and IISI display boards, Jan 18
 DisplayServer-TV video board, Feb 178
 DJK Development MS-410 hard drive, Jul 184
 DJK Development MS hard drive, Sep 184
 DJK Development TEO-One erasable optical

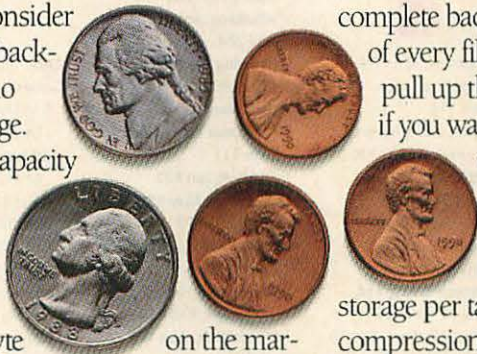
continues

THE ONLY 8MM TAPE DRIVE THAT CAN MAKE CHANGE.



IT MAKES CENTS. Take the magazine you're reading. To fill a single 8mm tape, you could backup every issue of MACWORLD for the next two years. A single issue costs just about 33 cents to store. Consider that you're spending less time backing up more data, and you're no longer dealing with small change.

Using our high speed, high capacity 8mm tape drives will save you time and money in manhours, media, storage, and shipping costs. In fact, our drives give you the lowest cost per megabyte on the market. On lightweight, reliable media. That is fast becoming an industry standard.



AND IT MAKES SENSE. The menu driven software features a calendar for automatic operation. Schedule a backup to run at any time, day or night. Choose an incremental or complete backup. The software's directory will keep track of every file that you've saved. To restore a file, simply pull up the directory and click on the file you want; if you want to create space on the hard drive, just copy selected files into the archive.

Compatible with all Macintosh models including systems running A/UX, our drives give you between 2.5GB and 25GB of storage per tape. Features like a liquid crystal display, data compression, data encryption, and high speed search capability give our drives the flexibility to adapt to your changing needs. We can meet any site requirements with rack mounting options, hard disk configurations, and a variety of cable lengths. And we back every product in our line with a 12-month warranty and technical support.

It doesn't make cents to wait. Call today for more information at 804/873-9000.

CONTEMPORARY
CYBERNETICS
Group

TRUE "PLUG-AND-PLAY" COMPATIBILITY WITH:

Alliant	DataGeneral	IBM	NCR	Pyramid
Alpha Micro	DEC 3100	Mainframe	Novell	Sequent
Altos	DEC BI-Bus	IBM	OS/2	Silicon
Apollo	DEC HSC	RISC/6000	PS/2	Graphics
Arix	DEC Q-Bus	IBM RT	PC 386/ix	Sun
AT&T	DEC TU/TA81	IBM S/38	PC MS-DOS	Unisys
Basic-4	DEC Unibus	Macintosh	PC Xenix/Unix	Wang
Concurrent	Gould/Encore	McDonnell	Pertec	and more
Convergent	HP	Douglas	Plexus	
	IBM AS/400		Prime	

Rock Landing Corporate Center • 11846 Rock Landing, Newport News, VA 23606 • 804/873-9000 • FAX 804/873-8836

Circle 188 on reader service card

drive, Jun 138
 Dollars & Sense, Mar 152
 DOS Mounter, Sep 269
 DoubleTalk, Apr 18
 DoubleUp compression board, Apr 95
 DoveFax Desktop fax modem, Aug 114
 DoveFax+ fax modem, Aug 114, Sep 223
 DPI 44 Removable drive, May 124
 DQ-Animaq Broadcast and DQ-Animaq Desktop, Feb 178
 DrawingCard 2-Page Display System, Oct 114
 DreamNet, Dec 111
 DriveSavers, Jun 18
 DVA-4000/Macintosh video board, Sep 206
 Dvorak keyboard, Jan 37
 DynoPage, Sep 230

E

Earl Weaver Baseball, Oct 186
 Earthquake prediction system, May 109
 Earthquake Preparedness Stack, Apr 124
 Earthquest, Apr 158
 Eastman Kodak XL 7700 printer, Feb 168
 Easy Access, Jul 263
 Easy Alarms, Nov 261
 Easy Color Paint, Apr 144
 Easy Envelopes+, Jan 77
 EasyKana, May 195, Sep 58
 Ecodisc, Sep 255
 Editorial Advisor, May 188
 Edit Worx, Feb 178
 Education
 About Cows, Dec 192
 Alge-Blaster Plus, Apr 177
 Algebra Homework Tutor, Apr 177
 Ask It, Jan 215
 Ballet Tutor, Apr 124
 Birds of America, Sep 256
 CD Companion Series:
 Igor Stravinsky: The Rite of Spring, Aug 162
 Dictionary of the Living World, Sep 255
 Earthquest, Apr 158
 EasyKana, May 195, Sep 58
 Electronic Workbench, Nov 259
 Geometer's Sketchpad, The, Nov 234
 Global Jukebox, Sep 141
 Learn to Speak Spanish, Sep 255
 Mac School, Jul 242
 Mathematics Teacher's Workstation, Jan 215
 MiBAC Music Lessons, Nov 250
 NumberMaze Decimals & Fractions, Oct 173
 Oregon Trail, The, Oct 176
 Point of View, Jan 214
 reader survey, Jul 165
 ReadingMaze, Nov 233
 SimEarth, Jun 162,

Sep 269
 SmartCards, May 196
 StatView Student, Nov 244
 String Quartet, The: The Essence of Music, Mar 164
 U.S. History on CD-ROM, Sep 255
 Wagon Train, Oct 176
 Where in Time Is Carmen Sandiego?, Jan 200
 Your Personal Trainer for the SAT, Apr 177
 Effects Specialist, Aug 122
 EGA/AT Option Module IBM PC emulator, Nov 224
 Ehman 20 Trinitron 8-Bit Color Monitor, Oct 114
 Ehman 45MB Removable Cartridge Drive, May 124
 Ehman 330MB and 660MB F/H Wren Runner hard drives, Jul 184
 Ehman series hard drives, Sep 184
 Ehman Two-Page Monochrome monitor, May 132
 Ektaplus 7016PS printer, Apr 18
 ElectricImage, Dec 181
 Electronic Frontier Foundation, Jun 38
 Electronic mail. See E-mail
 Electronic Workbench, Nov 259
 ELF emissions, Jan 17, Feb 83, Mar 29, Apr 87, Sep 127, Oct 65, 124
 E.L.F. Armor, Dec 44
 ELITE Professional Flight Simulator, Apr 166
 El Verbo Simple, Apr 124
 E-Machines/24 display board, Jan 152
 E-Machines T19 and TX monitors, Oct 114
 E-Machines XL8 and Futura/24 graphics/accelerator boards, Oct 97
 EMac Impact 150T tape drive, Nov 176
 E-mail
 ccMail, Jun 17
 MicroPhone interface to PB connection, Oct 93
 Microsoft Mail, Apr 93, Aug 150
 Network Courier, Jun 17
 privacy issues, Mar 63
 QuickMail, May 18, Sep 269
 WordPerfect Office, Dec 170
 EMF emissions, Jan 38
 Empower I and II, Jun 122
 Enchanted Journey, Jul 250
 Encryption, Jun 122. See also Security
 FlashCrypt, Apr 18
 Enhance, Jan 18, Nov 231, 291
 Entertainment. See Games
 Envelopes, AddressWriter, Apr 99
 Envision, Feb 18
 Epson America EPL-7500

printer, May 105, Dec 156
 Epson America ES-300C scanner, May 164, Jun 130
 Erasable MO Vista erasable optical drive, Jun 138
 Erasable optical drives, Jun 138
 Ergonomics, Aug 67, Sep 135
 E-Server/LAN, Apr 130
 Etch A Sketch, PostScript, Jan 113
 Ether+, Ether2, and EtherDS Ethernet connectors, Apr 130
 EtherGate, Apr 130
 EtherLink/NB and EtherLink/SE Ethernet connectors, Apr 130
 Ethernet, Apr 130. See also Networks
 Ethernet LC Card and Ethernet NB Card, Mar 105, Apr 130
 EtherNode series Ethernet connectors, Apr 130
 EtherPort series Ethernet connectors, Apr 130
 EtherPrint, Apr 202
 EtherRoute, Apr 130
 EtherVHP Ethernet connector, Apr 130
 Europa hard drive, Sep 184
 Excel. See Microsoft Excel
 Expanse NB4 and NB II, Jan 17
 Expert Backgammon, Jun 189
 Expresso slide scanner, Nov 153
 Extend, Sep 135
 Eyeballs, Jan 77
 EZ Vision, Jun 146

F

Fair Witness, Nov 159
 Fastback Tape drive, Nov 176
 FastNet series Ethernet connectors, Apr 130
 FastPath, Apr 130
 FastPath 5 Ethernet gateway, Sep 137
 FastTrack Resource, May 18
 Fax modems, Aug 114, Nov 37, Dec 228
 Comstation Four, Dec 18
 DataLink/Mac, May 174
 DoveFax+, Sep 223
 Teleport/Lap, Dec 115
 File compression. See Compression
 File conversion
 ConvertIt, May 192
 MacLinkPlus/PC and MacLinkPlus/Translators, Nov 18
 FileGuard, Jun 122
 FileList, Jan 77
 FileMaker
 compressing files, Sep 272
 exporting tagged text files, Jun 204
 importing Microsoft

Works data, Apr 191
 FileMaker Pro, Feb 184, 226
 button for New Record command, Oct 212
 customizing, Oct 227
 Insights, Mar 219
 tutorial, Aug 171
 File recovery, Apr 193, Aug 189
 Last Resort, Sep 235
 FileSecure 500 and 1000 tape drives, Nov 176
 File transfer
 Mac-to-Mac, Oct 191
 Rich Text format, Dec 17
 Software Bridge Macintosh, Apr 173
 FilmMaker, Mar 160, Nov 194
 Finances, Real Estate Investment Analysis, Jul 250
 Financial Decisions, Mar 152
 Financial programs, Mar 152. See also Accounting
 Finder, Jan 237
 increasing memory size, Dec 226
 Fiscal Knowledge, Nov 186
 FlashCrypt, Apr 18
 FlashWrite, Dec 152
 FlexFax 9624M fax modem, Aug 114
 FlexiTrace, Oct 195
 Flexware II, Nov 186
 Floppy disks
 cataloging, Feb 240, Apr 178, Aug 171
 converting MFS to HFS, Feb 266
 defective, May 211
 difference between 800K and 1.4MB, Oct 211
 labels, Apr 178
 mailing, Jun 203
 rebuilding desktop file, Jul 264
 replacing defective, Apr 193
 Floppy Fixer, Jan 77
 Fluent Laser Fonts Library, Jan 113
 FolderBolt, Jun 122
 FolderJump, May 196
 FONDLer, Jan 77
 Font/DA Mover, May 152, Nov 278
 Fontina, May 152
 FontMonger, Oct 162
 Fontographer, Aug 122
 Fonts
 Apple support for Type 1 PostScript, Nov 17
 ATF Type Designer I, May 18, Aug 122
 avoiding conflicts, Feb 266
 Bitstream Type 1, Feb 18
 Chicago symbols, Nov 278
 creating, Aug 122
 digital type primer, Jul 202
 Effects Specialist, Aug 122
 embossed text, Nov 276
 Fluent Laser Fonts Library, Jan 113

FONDLer, Jan 77
 FontMonger, Oct 162
 Fontographer, Aug 122
 FontStudio, Jul 17, Aug 122
 Ikarus-M, Aug 122
 Initial Caps, Aug 172
 installing and organizing, May 152
 LetraStudio, Jul 17, Aug 122
 Multiple Master typefaces, May 18, Jun 99
 patterned text without PostScript, Sep 273
 PostScript versus TrueType, Sep 194
 RandomFonts, Jan 103
 Smart Art, Aug 122
 special effects programs, Aug 122
 TypeChart, Apr 124, Jul 249
 TypeStyler, Aug 122
 typography tips, Oct 131
 VideoQuill, Jun 186
 FontStudio, Jul 17, Aug 122
 Forms design
 If: X, Jan 18
 One Shot, Jul 249
 FoxPro/Mac, Apr 103
 Fractal Attraction, May 196
 FrameGrabber 324NC board, Feb 178
 FrameMaker, Jan 180, May 17
 4th Dimension link, Dec 18
 FriendlyNet LC Card Ethernet connector, Apr 130
 Frontier, Aug 51, Nov 159
 Ft. Knox, Jun 122
 Fujitsu RX7100PS printer, May 142
 FullWrite Professional, Sep 160

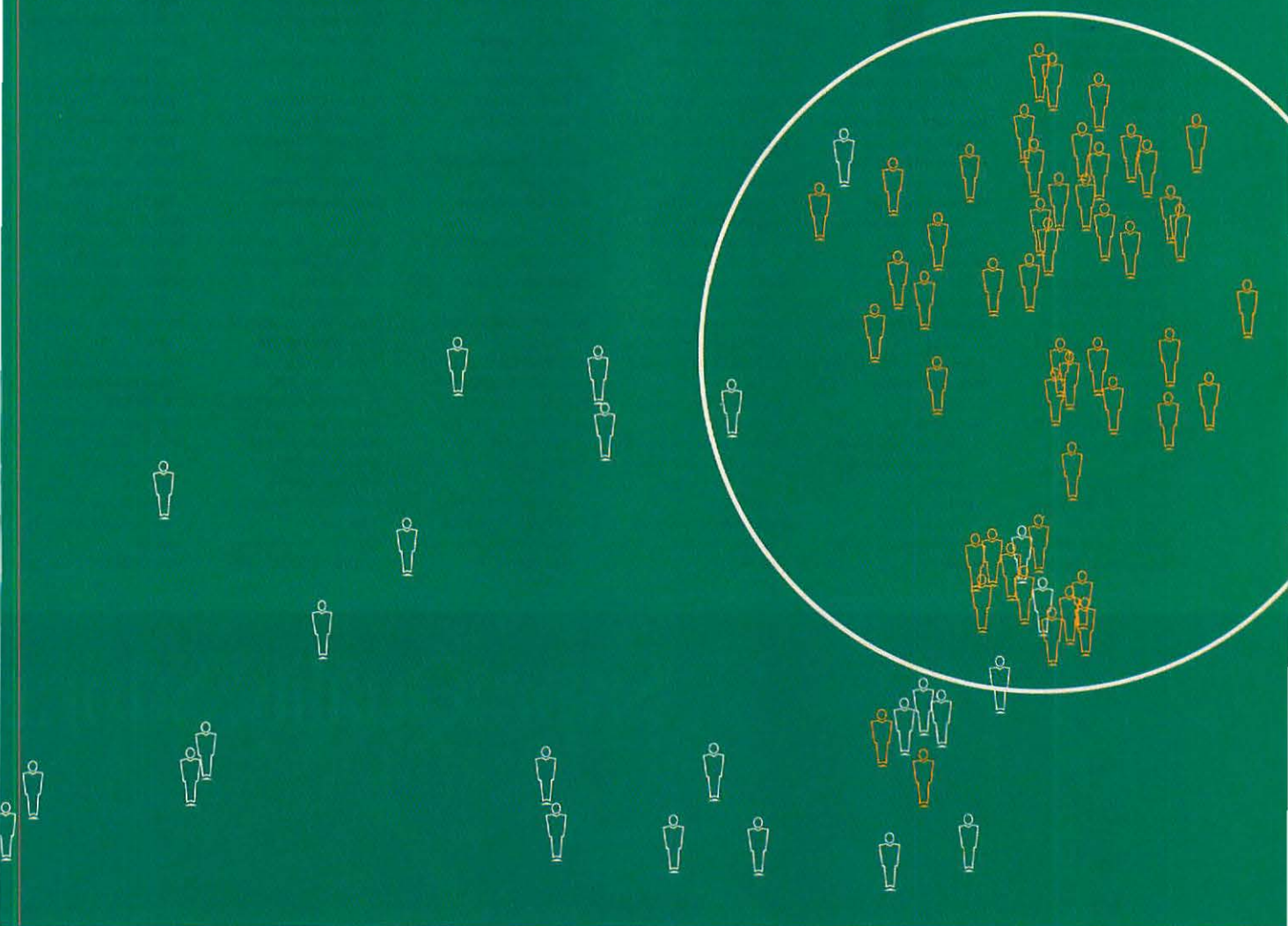
G

GAIA, Aug 93
 Games, Jan 77
 3 In Three, May 195, Dec 152
 Adventures of Willie Beamish, The, Sep 20
 Baker's Dozen, Jan 77
 Billiards, Jan 77
 Canfield, Jan 77
 Conquest of the Long Bow—the Legend of Robin Hood, Sep 20
 Darwin's Dilemma, Jan 203
 Earl Weaver Baseball, Oct 186
 ELITE Professional Flight Simulator, Apr 166
 Enchanted Journey, Jul 250
 Expert Backgammon, Jun 189
 Glider+, Jan 77
 Golf, Jan 77
 Go Junior, Feb 218
 GunShy, May 211
 King's Quest V, Sep 20
 Klondike, Jan 77
 Leisure Suit Larry, Sep 20
 Loom, Sep 245
 MacTrek, Jan 77

Montana, Jan 77
 NumberMaze Decimals & Fractions, Oct 173
 Oregon Trail, The, Oct 176
 Pararena, Jan 77
 Playmaker Football, Feb 220
 Police Quest, Sep 20
 PuzzleMaker, Aug 171
 ReadingMaze, Nov 233
 RoboSport, Sep 217
 SimAnt, Dec 17
 SimEarth, Jun 162, Sep 269
 Solarian II, Jan 77
 Space Quest IV, Sep 20
 Spaceship Warlock, Sep 129, Oct 180, Dec 152
 Stained Glass, Jan 77
 Tesserae, Nov 248
 Trick or Treat, Jul 250
 Wagon Train, Oct 176
 Where in Time Is Carmen Sandiego?, Jan 200
 Garage, The, May 109
 Gates, Bill, Sep 67
 GatorBox, Apr 130
 GatorCard E/II Ethernet connector, Apr 130
 GCC BLP IIs printer, May 142
 GCC PLP II printer, May 18, 142
 GCC UltraDrive430S hard drive, Jul 184
 Gemini and Gemini II accelerator boards, Jul 210
 Generation Systems 15 One-Page Display, May 132
 Generation Systems Ether TnT and TwP series Ethernet connectors, Apr 130
 Generation Systems Grayscale Display, May 132
 Generation Systems Monochrome Display, May 132
 Generation X Technologies Color 24gx board, Jan 152
 Genius Dual Page Monitor, May 132
 Genius Full Page Monitor, May 132
 Geometer's Sketchpad, The, Nov 234
 GeoQuery, Sep 20
 GeoVista, May 18
 Glider+, Jan 77
 GlobalGate, Dec 17
 Global Jukebox, Sep 141
 Gofer, Mar 130
 Go Junior, Feb 218
 Golf, Jan 77
 GraceLAN, Jul 244
 Grammar checkers, Aug 138
 Grammatik Mac, Aug 138
 Graphics. See also Adobe Photoshop; CAD
 3-D, Jan 18, Aug 197
 accelerators, Jan 136
 Adobe Illustrator, Feb 196
 Aldus FreeHand, Aug 148, Dec 17

continues

Plot Their Next Move.



and start planning yours. Statistical software from SPSS helps you perform all types of market research. . . from survey and product packaging research to direct response and customer satisfaction analysis. You'll have the power to enter, edit, manage, analyze and present data with the most in-depth statistical software available. Software that helps 26 of the top 30 market research firms target segments and interpret buying behavior more effectively. Move to SPSS, suppliers of statistical solutions to over 2 million users worldwide. Call 1(800) 45-STATS or FAX (312) 329-3668. and stay a step ahead of the crowd.

SPSS

We're Making It Easier To Decide.



Statistical Software For All Leading Computing Environments. Offices in Chicago · Washington, DC · Chertsey, UK · Gorinchem, The Netherlands · Munich · Singapore · Stockholm · Sydney · Tokyo · And Distributors Worldwide

Circle 210 on reader service card

Amazing Paint, Jan 184
 CA-Cricket Draw, Jan 42
 Canvas, Feb 18, Apr 101
 color paint programs,
 Apr 144
 ColorStudio, Jan 144, Apr
 144, Sep 135
 data visualization,
 Mar 172
 ElectricImage, Dec 181
 Envision, Feb 18
 Infini-D, Sep 222
 Initial Caps, Aug 172
 IRIS Graphics Library,
 Dec 17
 Jag, Dec 177
 Kid Pix, Jan 77, Aug 152,
 Dec 152
 MacRenderMan, Jan 176
 Michael's Draw, Dec 179
 ModaVision, Feb 18
 ModelShop, Feb 18
 Oasis, Jul 221
 Painter, Sep 131
 PixelPaint Professional,
 May 235, Sep 209
 Ray Dreams Designer,
 Mar 97, Sep 244
 Sketch, Oct 91
 StrataVision 3d, Jun 18
 Studio/8, Jun 182
 Studio/32, Apr 144, 154
 Upfront, Mar 109
Graphs
 Cheshire, Mar 177
 DeltaGraph Professional,
 Sep 19
 FlexiTrace, Oct 195
 KaleidaGraph, Sep 253

MacGraphX, Apr 175
 TopDown, Oct 186
 Gray-Vision Two-Page
 Display, May 132
 Great Plains Accounting,
 Nov 186
 GreatWorks, Oct 99,
 Nov 163
 Guide, Nov 194
 GunShy, May 211
H
 HammerDisk44 remov-
 able-cartridge disk
 drive, May 124
 HammerDisk600S erasable
 optical drive, Jun 138
 HammerFMF hard drive,
 Mar 136
 Hammer series high-
 capacity hard drives,
 Jul 184
 HammerTape250 tape
 drive, Nov 176
 HandOff, Mar 130
 Handwriting recognition,
 Jun 18
 Paper Keyboard, Jul 234
 Hard Disk Deadbolt,
 Jun 122
 Hard drives, Mar 136, Jul
 184, Sep 184. See also
 Removable-cartridge
 drives
 as start-up drive, Mar
 195, Jun 203
 data-recovery services,
 Dec 73

displaying space available,
 Feb 264
 HP high-capacity, Dec 18
 Jasmine, Apr 75, May 31,
 34, Nov 18, Dec 17
 large-capacity, Jul 184
 Liberty 80, Apr 171
 MacinStor Series 1300,
 Oct 97
 MicroNet, Feb 119
 Microtech, Feb 119
 partitioning, Aug 189
 PocketDrive, Dec 111
 Storage Dimensions
 internal, Feb 119
 SyQuest suit, Feb 113
 Tsunami 80-Q, Apr 171
 HardPac hard drive, Mar
 136, Sep 184
 Hard Plus 1.0 Gig - Wren
 hard drive, Jul 184
 Hard Plus 330 and 660 -
 Runner hard drives,
 Jul 184
 Hard Plus hard drive,
 Mar 136
 Hayes Personal Modem
 2400plus, Dec 152
 HD Porta-Drive hard drive,
 Sep 184
 HDI PowerDrive 600I hard
 drive, Jul 184
 Health risks, computer-
 related, Aug 67, Sep
 135. See also ELF
 emissions
 Heat Seeker II Macintosh
 clone, Nov 167
 HiQ, Feb 115

HOPS, Apr 97
 HP DeskJet printer, Jul 18
 HP DeskWriter C printer,
 Oct 91
 HP high-capacity hard
 drives, Dec 18
 HP LaserJet IIP printer, Feb
 42, May 142
 HP LaserJet II printer,
 Dec 156
 HP LaserJet III printer,
 Jul 157
 HP LaserJet IIIi printer,
 Jul 157, Dec 156
 HP PaintJet Color Graphics
 Printer, Feb 168
 HP PaintWriter printer,
 Jun 111
 HP PaintWriter XL printer,
 Feb 168
 HP ScanJet IIc scanner,
 Nov 157
 HP ScanJet Plus scanner,
 Oct 146
 Hublet port repeater,
 Oct 20
 Human Immune System,
 The, Jan 105
 Hydra One board, May 107
 Hyper-Abledata, Apr 124
 HyperBible, Dec 186
 HyperCard, Jan 101, Apr
 124, Sep 297
 2.0 Development Kit,
 Apr 191
 2.0 Upgrade, Apr 191
 adding rulers, Dec 226
 Andean World, The,
 Apr 124

Ballet Tutor, Apr 124
 Bayshore Blast, Apr 124
 beep when button
 pressed, Nov 275
 Bird Anatomy II, Apr 124
 Book of MIDI, The,
 Apr 124
 Bubble Help for Hyper-
 Card, Apr 124
 Convert It, May 192
 Cosmic Osmo, Apr 124
 Dancing Mouse, The,
 Apr 124
 Dialoger Professional,
 Apr 124
 diary stack, Feb 264
 Display Net, Apr 124
 Earthquake Preparedness
 Stack, Apr 124
 Earthquest, Apr 158
 EasyKana, May 195,
 Sep 58
 El Verbo Simple, Apr 124
 figuring angle of gradient
 fill, Jun 204
 GunShy, May 211
 Hyper-Abledata, Apr 124
 HyperBible, Dec 186
 HyperCard VideoDisc
 Toolkit, Feb 178
 HyperMailbox, Apr 124
 HyperRegister, Apr 124
 HyperSnoop, Jan 218
 Insights, Sep 297
 interface, Apr 124
 Kids Can Save the Earth,
 Apr 124
 Lazy Eye, The: A Primer
 of Neuro-ophthalmology,
 Apr 124

Apr 124
 LessonCard, Apr 124
 Ludwig van Beethoven
 Symphony No. 9,
 Apr 124
 Mac Frog, Apr 124
 Mackerel Stack, The,
 Apr 124
 Macroscopic, Apr 124
 Manage Your Closet,
 Jul 250
 Metromorphosis, Apr 124
 Microsoft Excel Tutorial,
 Apr 124
 multimedia design,
 Nov 194
 MusiCard Maker,
 Apr 178
 Outdoor and Vacation
 Adventure Guide,
 Apr 124
 Peacock, Jun 190
 Revolución, Apr 124
 ScriptEdit, Jun 190
 selecting user level, Apr
 191, Aug 189
 showing hidden buttons,
 May 211
 Simulation of Acute
 Myocardial Infarction,
 A, Apr 124
 SmartCards, May 196
 SuperImage, Apr 124
 SuperStacks contest,
 Apr 124
 Terremoto, Apr 124
 TypeChart, Apr 124,
 Jul 249
 Video Publisher, May 113

SupraQuality, Supra

V.32bis



SupraFAX Modem V.32bis \$479.95

14,400 S/R FAX • 14,400 DATA

COMPLETE PACKAGE FOR THE MAC!

Each of these modems comes with everything you'll need to use it right away, including cables, manuals, & software: FAXsif™, MicroPhone™ 1.6, America Online™, & CompuServe Information Manager™.

Women Artists of Color
videodisc, Apr 124,
May 113
HyperCard VideoDisc
Toolkit, Feb 178
HyperMailbox, Apr 124
HyperRegister, Apr 124
HyperSnoop, Jan 218
HyperTax Tutor, Mar 152

I
IAC, Aug 51, Nov 159
IBM PC
converting HyperCard
stacks to ToolBook
format, May 192
EGA/AT Option Module
PC emulator, Nov 224
Hydra One board,
May 107
IBM-Apple technology
agreement, Sep 19, Oct
25, 55, Nov 149,
Dec 17
QuickMail, May 18
SoftPC for the Classic/LC
PC emulator, Nov 224
Software Bridge Macin-
tosh, Apr 173
transferring files to
Macintoshes, Sep 269
versus Macintosh,
Mar 120
Icons
changed after Desktop
rebuild, May 211
copying entire name of,
Apr 195

wiped out in Finder view,
Apr 191
iDS 45 Removable drive,
May 124
iDS Systems Pro hard drive,
Sep 184
iDS Systems V.S.P. hard
drive, Mar 136
iDS Systems Wip hard
drive, Sep 184
If-X, Jan 18
Ikarus-M, Aug 122
Ikegami Grayscale Package
monitor, May 132
Image Grabber, Jul 246
Image processing, Nov
291, Dec 233
Adobe Photoshop, Sep
135, 248, Nov 291
Aldus Digital Darkroom,
Sep 226
ColorStudio, Jan 144, Apr
144, Sep 135
Enhance, Nov 231, 291
Picture Desk, Aug 81
ImageWriter II printer,
Sep 270
transformer for operating
abroad, Jul 263
Imapro QCS-120 scanner,
Jun 130
Impressit, Jun 23
Imprimis series hard drives,
Jul 184
Index hard drive, Mar 136,
Sep 184
Index Portrait Monitor,
May 132
Infini-D, Sep 222

Infinity40 Turbo and Turbo
Economy removable-
cartridge drives,
May 124
Infinity 88 Turbo remov-
able-cartridge drive,
Jun 101
Infinity Optical erasable
optical drive, Jun 138
In Focus 5000M Direct
View monitor, Mar 101
In Focus 5000M thin-panel
color display, Feb 17
Inforum, Nov 151
In-House Accountant,
Nov 186
Initial Caps, Aug 172
INIT Manager, Mar 130
INITPicker, Mar 130
Input devices, Aug 67. See
also Keyboard; Mouse
Air Mouse, Feb 18
for disabled, Jun 91
MacTrac II trackball,
Sep 139
MousePenMac, Nov 255
MVP Footswitch, Feb 129
MVP Mouse, Feb 129,
Nov 255
pressure-sensitive tablets,
Apr 144
replacing trackball with
billiard ball, Jun 204
Silhouette Trackball,
Dec 152
Stingray Ergonomic
Trackball, Sep 143
Wacom SP series styluses,
Jun 164

Insight Expert Accounting
Series, Nov 186
Inspiration, Dec 195
Inspire erasable optical
drive, Jun 138
Instant Library of Quota-
tions, Jun 189
Instant Update, Jul 163,
Nov 151
Integrated applications
BeagleWorks, Oct 19,
Nov 163
ClarisWorks, Nov 163
GreatWorks, Oct 99,
Nov 163
Microsoft Works, Apr
191, Sep 160, Nov 163
Intensifier ci accelerator
board, Jul 210
Interactive Media Tech-
nologies IMTX 8000,
Feb 178
Interapplication communi-
cations. See IAC
interface, Apr 124
Interface Agent, Jan 107
InterFax 24/96 fax modem,
Aug 114
Interleaf, May 103
Internet Manager, Feb 152
InterPoll, Feb 152
Intersect CDR-36 and
CDR-73 CD ROM
drives, Jun 17
Intertie, Dec 18
InTouch, May 183
Introduction to Digital
Color Prepress, Jan 231
Investor, The, Mar 152

IRIS Graphics Library,
Dec 17
Irwin Model 5080 tape
drive, Nov 176
J
Jag, Dec 177
Jasmine, Apr 75, May 31,
34, Nov 18, Dec 17
Jasmine Removable 45
drive, May 124
JClock, removing, Oct 212
JMP, Oct 95
K
KaleidaGraph, Sep 253
KaleidoScan, Jun 130
Kensington Printer Muffler,
Dec 152
Keyboard
alternatives, Aug 67
Dvorak, Jan 37
keystroke command
shortcuts, Jan 237
long cable for, May 218
MacPro Plus, Sep 228
Switchboard, Feb 198
vacuum, Dec 152
Keyboard Shelf, Feb 240
Kid Pix, Jan 77, Aug 152,
Dec 152
Kids Can Save the Earth,
Apr 124
King's Quest V, Sep 20
KiwiFinder Extender,
Feb 239
Klondike, Jan 77

Knowledge Retrieval
System, Apr 95
Kodak color space transla-
tion/accelerator, Sep 19
Kodak Diconix Color 4
printer, Apr 97
Kodak Ektapix 7016 PS
printer, Dec 156
L
LabanWriter, Feb 125
Labels, Sep 285
ColorDex, Aug 171
Personal Label Printer,
Aug 87
LabView 2, Oct 175
La Cie 600 Magneto
Optical drive, Jun 138
La Cie ZFP 45R removable-
cartridge drive,
May 124
La Cie ZFP hard drive, Mar
136, Jul 184, Sep 184
La Cie ZFP+ series hard
drives, Jul 184
LANalyzer Network
Analyzer, Feb 152
LanWay E series Ethernet
connectors, Apr 130
Lapis FullPage Display,
Dec 115
LapLink Mac, Sep 269
Laptops. See Portables
Larry Rosen Programs,
Mar 152
LaserFrame erasable
optical drive, Jun 138
continues

Prices, SupraFAXModems

Introducing the SupraFAXModem™
— three exciting new fax modems for
Class 1 & 2 fax commands & compatibility
with Group 3 fax machines, plus
V.42bis & MNP (2-5, 10) data com-
pression & error correction. And
each SupraFAXModem is System 7

compatible & comes with
everything needed to
get it right away.

Now you can send & receive quality faxes
in the background and enjoy transmission
scheduling, fax broadcasting to multiple
destinations, & an activity log. And for
telecom, you'll have a sophisticated scripting
language & support for CRC, MacBinary
XModem, & YModem protocols.



SupraFAXModem V.32 \$379.95
9600 S/R FAX • 9600 DATA



SupraFAXModem Plus \$249.95
9600 S/R FAX • 2400 DATA



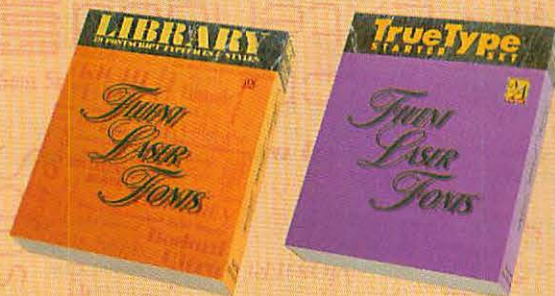
ORDERS: 1-800-967-8772

DISTRIBUTED BY MERISEL/MACAMERICA

7101 Supra Drive S.W., Albany, OR 97321 USA • 503-967-2401 Fax • 503-967-2410

Fonts

Quality & Style at a great price
from Casady & Greene



Fluent Laser Fonts™ Library

79 typefaces & styles

Macintosh: \$179.95

Includes PostScript™ Type 1
& TrueType™ formats.

IBM/PC: \$189.95

PostScript Type 1 & Adobe's ATM™,
Works with Windows® 3.0,
WordPerfect™ 5.1 and Word™ 5.0.

TrueType® Starter Set

22 typefaces from
Casady & Greene's
extensive Fluent Laser
Fonts Library
in TrueType format.

\$99.95
Macintosh

LIBRARY

• ABILENE

Alexandria
Alexandria Italic
Alexandria Bold
Alexandria Bold It.
Bodoni Laser
Bodoni Italic
Bodoni Bold
Bodoni Bold Italic
Bodoni Ultra
Bodoni Ultra It.
Bodoni Ultra Condensed
Bodoni Ultra Condensed Italic
Calligraphy
Casade
COLLEGIATE
COLL. BLACK
COLL. OUTLINE
Country Script
DESPARADO

• DOROVER

Dorover Italic
DRY GULCH
Galileo Roman
Galileo Italic
Galileo Bold
Galileo Bold Italic

Casady

Casady Italic
• Casady Demibold
Casady Demibold Italic
• Gazelle
• Gregorian
• Jott Casual
• Jott Quick
• Jott Light
• Jott Quick Light
Kettis
• CDeach
Micro
Micro Italic
Micro Bold
Micro Bold Italic
Micro Extended
Micro Ext. Italic
Micro Ext. Bold
Micro Ext. Bold It.
MONTEREY
MONTEREY Italic
MONTEREY Medium
MONTEREY Bold
MONTEREY Bold Italic

• Paladin

Paladin Script
Paladin Script Light
Paladin Script Bold
Paladin Script Bold Italic
• Regency Script
FITZ
FITZ Italic
FITZ Condensed
RIGHT BANK
• Sans Serif
• Sans Serif Italic
Sans Serif Book
Sans Serif Book Italic
• Sans Serif Demibold
• Sans Serif Demibold Italic
Sans Serif Bold
Sans Serif Bold Italic
Sans Serif Bold Condensed
Sans Serif Bold Condensed Italic
• Sans Serif Ex. B.
• Sans Serif Ex. B. Ital.
Sans Serif Ex. Bold Cond.
Sans Serif Ex. Bold Cond. Italic
Zephyr Script

* Included in TrueType Starter Set

We also have additional fonts including Cyrillic, give us a call for information.

Casady & Greene, Inc

22734 PORTOLA DR., SALINAS CA 93908-1119

408-484-9228 • FAX 408-484-9218 • 1-800-359-4920

Dealer Inquiries Welcome

All products are trademarks or registered trademarks of their manufacturers

LaserJet IIP printer, May 18
LaserMaster 800, 1000,
and 1200 printers,
Dec 156
LaserMax 1000 printer,
Mar 161
LaserSafe erasable optical
drive, Jun 138
LaserWriter printer, turning
off start-up page,
Jul 264
LaserWriter II light stays
on, Feb 267
LaserWriter II and IIg
printers, Dec 156
Last Resort, Sep 235
Layout, Jun 209
Lazy Eye, The: A Primer of
Neuro-ophthalmology,
Apr 124
Learn to Speak Spanish,
Sep 255
Legacy 150s and 500s tape
drives, Nov 176
Leisure Suit Larry, Sep 20
Lesson Card, Apr 124
LetraStudio, Jul 17,
Aug 122
Liberty 80 hard drive,
Apr 171
Liberty hard drive, Mar
136, Sep 184
Life Forms, Oct 97
LifeGuard, May 188
LifeMap, Jan 101
LightFax 9624 fax modem,
Aug 114
LightningScan 400 hand-
held scanner, Jun 154
LightningScan Compact
scanner, Dec 152, 172
Light Source Software for
NEC, Feb 178
Lingraphica, Mar 99
Linux Industrial, Nov 194
LiteShow II, Sep 237
LocalPeek, May 18
LocalSwitch network hub,
Jul 163, Sep 219
Locked files, throwing
away, May 218
Loom, Sep 245
Lotus Marketplace, demise
of, Apr 17, Jun 69,
Sep 55
Ludwig van Beethoven
Symphony No. 9,
Apr 124
L-View Multi-Mode
monitor, May 132,
Oct 166



Mac1000 and Mac2000
Ethernet connectors,
Apr 130
MacAcademy, Dec 199
MacBack 8000, Mar 171
MacBible, Dec 186
MacBottom hard drive,
Sep 184
MacCache-LP accelerator
board, Jul 210
MacCon+30i Ethernet
board, Jan 109
MacCon+30i/Radiu
Ethernet/color board,
Sep 19
MacCon+ series Ethernet
connector, Apr 130

MacConnect/SE and Mac-
Connect SE/30 Ethernet
connector, Apr 130
MacDINE, Aug 172
MacDirect Fujitsu 1.2GB
hard drive, Jul 184
MacDraw Pro, Nov 228
Mac Frog, Apr 124
MacGateWay AT, Apr 130
MacGlobe, Nov 18
MacGraphX, Apr 175
MacHandwriter, Jun 18
MacInStor 325-S1 and
1020-S1 hard drives,
Jul 184
MacInStor Erasable Optical
1000 drive, Jun 138
MacInStor hard drive, Sep
184
MacInStor Series 1300 hard
drive, Oct 97
MacInStor ZFP hard drive,
Mar 136
MacInTax, Mar 152,
Apr 209
Macintosh IIci Cache Card,
Jun 17
Macintosh IIsi
color/accelerator board,
May 111
graphics boards power
drain, Mar 103
MacCon+30i/Radiu
Ethernet/color board,
Sep 19
Spectrum/8 si graphics
board, Jul 155
Macintosh 21" Color
Display, Sep 127
Macintosh Art Contest,
Mar 144
Macintosh Bible Disks,
Feb 239
Macintosh Classic
commentary, Mar 23
upgrade, Jan 17, Feb 119
Macintosh Classic II,
Dec 148
Macintosh Display Card
4*8 and 8*24GC,
Feb 178
Macintosh Display Card
8*24, Jan 152, Feb 178
Macintosh Display Card
8*24 GC accelerator
board, Jan 136
Macintosh LC
Apple II emulation board,
Jul 18
Spectrum/8 LC graphics
board, Jul 155
VGA monitor support,
Apr 18
Macintosh Portable,
backlit, Apr 17
Macintosh SE upgrade,
Jan 18
Macintosh Stackable hard
drive, Mar 136
MacInUse, Feb 152
Mackerel Stack, The,
Apr 124
MacKit hard drive,
Mar 136
MacLand hard drive, Mar
136, Sep 184
MacLand SyQuest remov-
able-cartridge disk
drive, May 124
MacLinkPlus/PC, Sep 269,
Nov 18

MacLinkPlus/Translators,
Nov 18
MacList, Apr 177
MacLock, Jun 122
Mac MBA Video Training
Courses, Dec 199
Mac Minder, Mac II
Minder, and Mac Side
Minder stands, Jun 190
MacMoney, Mar 152
MacNexus Interface,
Jun 146
MacPhoneBook, Apr 178,
Sep 239
MacProducts 030 RailGun
accelerator board,
Jul 210
MacProject II
Insights, Jun 231
tutorial, Aug 171
MacPro Plus keyboard,
Sep 228
MacProteus, Jan 188
MacQwerty, Jan 37
MacRecorder, Nov 276
MacRenderMan, Jan 176
MacroMaker, Apr 138
MacroMind Director,
multimedia design,
Nov 194
Macros, Apr 138
AutoMac, Jul 39
QuickKeys, Mar 130, Apr
138, Jul 39, Nov 159
QuickKeys2, Jan 178
Macroscopic, Apr 124
MacSafe II, Jun 122
Mac School, Jul 242
MacSleuth, Feb 239
MacSpin, Oct 95
MacSPIRS, Jun 177
MacStack Removable drive,
May 124
MacTape/SCSI-7 tape
drive, Nov 176
MacToken, Feb 152
Mac-to-Mac, Oct 191
MacTools Deluxe, Jan 210,
Mar 130, Jun 122,
Aug 189
MacTrac II trackball,
Sep 139
MacTrek, Jan 77
Mac USA, Apr 18
MacVac and MacVac-S,
Feb 178
Mac Video Color Card,
Feb 178
MacVision and MacVision
Color, Feb 178
MacWrite II, Sep 160
training, Dec 199
Magic, Sep 137
Magic 600 Optical ISO
erasable optical drive,
Jun 138
MagicDrive 45 Removable
drive, May 124
MagicDrive 300 and 600
hard drives, Jul 184
MagicDrive hard drive,
Sep 184
Magic EtherNet II and
Magic EtherNet II/10T
Ethernet connector,
Apr 130
Magic hard drive, Mar 136
MagicTape 60 and 150
tape drives, Nov 176
MagicView monitor,
Oct 114

Circle 32 on reader service card

Mail-order companies, Nov 71
 Mainstay, Sep 107
 Manage Your Closet, Jul 250
 Manapro Accounting Software, Nov 186
 Mandala, Feb 127
 Manufacturing, computers in, Dec 29
 MapInfo, Jun 175, Sep 20
 MapMaker, Jan 105
 Mapping
 ArcView, Sep 139
 Atlas GIS, Jan 107
 color version of Map control panel, Nov 289
 Descartes, Jun 175
 GAI, Aug 93
 GeoQuery, Sep 20
 GeoVista, May 18
 MacGlobe, Nov 18
 Mac USA, Apr 18
 MapInfo, Jun 175, Sep 20
 MapMaker, Jan 105
 MaraThon 020 and 030 accelerator boards, Jul 210
 MaraThon 030 Classic upgrade board, Jan 17, Feb 119
 Mariah, Jun 99
 Market Manager Plus, Mar 152
 Marstek M800 Mac 64 hand-held scanner, Jun 154
 Marstek M800 scanner, Jan 17
 Masquerade, Oct 182
 MasterColor, Apr 144
 MasterFinder, Apr 18, Jun 189
 MasterJuggler, Feb 266, Apr 191, Mar 130, May 152
 increasing limit on files open, Jul 263
 MasterKey, Aug 172
 MasterPlan, Jun 101
 MasterStrokes, Apr 138
 Math
 Alge-Blaster Plus, Apr 177
 Algebra Homework Tutor, Apr 177
 Geometer's Sketchpad, The, Nov 234
 HiQ, Feb 115
 KaleidaGraph, Sep 253
 Mathematics, Feb 125
 Mathematics Teacher's Workstation, Jan 215
 NumberMaze Decimals & Fractions, Oct 173
 Mathematics, Feb 125
 Mathematics Teacher's Workstation, Jan 215
 Mavis Beacon Teaches Typing, Jan 37
 Max, Jan 18, Nov 194
 MaxAppleZoom, Jan 77, Feb 263, Oct 197
 MaxWay 500, Apr 130
 McSink, Jan 77
 M.D.A. and M.D.A. Basics, Nov 186
 MediaMaker, Aug 154, Nov 194
 MediaNode, May 113
 Mediator video-conversion box, Sep 206
 MediaTracks, Jan 198, Nov 194
 Medicine
 Human Immune System, The, Jan 105
 Lazy Eye, The: A Primer of Neuro-ophthalmology, Apr 124
 Lingraphica, Mar 99
 QCT-Bone Mineral Density Analysis, Mar 103
 Simulation of Acute Myocardial Infarction, A, Apr 124
 Meeting Maker, Feb 17, Nov 239
 MegaGraphics 2008/16" Color Display System, Oct 114
 MegaGraphics 2008/19" Display System, Oct 114
 MegaGraphics 2024 TrueColor board, Jan 152
 MegaGraphics 4001 Rival monitor, Feb 119
 MegaGraphics Grayscale monitor, May 132
 MegaGraphics multifunction display adapter board, Feb 127
 MegaGraphics Rival monitor, May 132
 MegaScreen 19" monitor, May 132
 MegaScreen monitor, May 132
 Memory upgrades, Apr 197. See also Boards
 Metro series hard drives, Mar 136, Jul 184, Sep 184
 Metromorphosis, Apr 124
 MiBAC Music Lessons, Nov 250
 Michael's Draw, Dec 179
 MicroLaser PS35 printer, May 142
 MicroMac SE, Jan 18
 Micron Xceed IICI accelerator board, Jul 210
 MicroNet Technology
 CMO-1 erasable optical drive, Jun 138
 MicroNet Technology CPKT-155, CPKT-600, and MT-155 tape drives, Nov 176
 MicroNet Technology MR-45 removable-cartridge disk drive, May 124
 MicroNet Technology MR-90 removable-cartridge drive, Jun 101
 MicroNet Technology MT-150 and MT-320 tape drives, Nov 176
 MicroNet Technology SB-303NP hard drive, Jul 184
 MicroNet Technology SB series hard drives, Jul 184
 MicroNet Technology SB-SMO-1 erasable optical drive, Jun 138
 MicroPhone II, Feb 17
 MicroPlanner Manager, Oct 20
 Microsoft Corporation, commentary, Sep 67
 Microsoft Excel, Mar 101, Sep 204
 @Risk, Sep 20
 entering hundredths of a second, Oct 211
 Info window for multiple cells, Apr 192
 Microsoft Excel Tutorial, Apr 124
 tips, Aug 191
 What-If Solver Premium Edition, Sep 20
 Microsoft Excel Tutorial, Apr 124
 Microsoft Mail, Apr 93, Aug 150
 Microsoft Project, Sep 129, Nov 210
 Microsoft Schedule+, Nov 239
 Microsoft Word, Sep 160
 aligning columns, Oct 211
 creating Table menu, Oct 212
 formula commands, Mar 195
 getting rid of Temp files, Oct 197
 scroll to last cursor location, Apr 193
 shading lines in tables, May 216
 speedy horizontal scrolling, Mar 200
 Microsoft Works, Nov 163
 transferring data to FileMaker, Apr 191
 word processing module, Sep 160
 Microtech N1000 hard drive, Jul 184
 Microtech OR650 erasable optical drive, Jun 138
 Microtech R50 removable-cartridge drive, Feb 234, May 124
 Microtech T150 tape drive, Nov 176
 Microtek MSF-3002S scanner, Jun 130
 MicroTV video board, Feb 178
 MIDI. See Music
 MidiFace EX and MidiFace LC, Jun 146
 MIDI Interface, Jun 146
 MIDI Translator, Jun 146
 MiniCad+, Jul 231
 Minimum Requirements, Nov 186
 MiniPak 150T tape drive, Nov 176
 MiniPak hard drive, Mar 136
 Minitab, Sep 20
 Mirror ProView Trinitron monitor, Feb 125
 Mirror Technologies M Series hard drives, Mar 136, Sep 184
 Mirror Technologies M325 and M595 hard drives, Jul 184
 Mirror Technologies RM42 continues

DESIGNATED DESIGNER

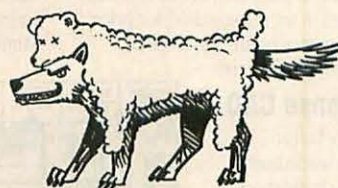
Creator

WHEN YOUR ADVERTISING IS ON THE LINE, SHIFT INTO CREATIVE MODE. LET MULTI-AD CREATOR™ PUT YOU IN THE DESIGNER'S SEAT. CALL TODAY.

MULTI-AD SERVICES, INC.
 1-800-447-1950, ext. 354.

Circle 115 on reader service card.

See us at Macworld Expo Booth # 5722, Brooks Hall



Seeing the obvious isn't always enough.

Dangerous exceptions. Lurking trends. The herd of ordinary statistics programs can't see them. Defend yourself with Data Desk – the only software designed for Exploratory Data Analysis. Call now for a free Mac test flight. Because what you don't see can hurt you.

Data Desk
 607-257-1000

Ireland: (353) 1 766 929 Sweden: (46) 8 25 07 10 Australia: (61) 6 257 6873

Data Desk is a registered trademark of Data Description, Inc.

Circle 95 on reader service card.

removable-cartridge drive, May 124
 Mirror Technologies RM600 erasable optical drive, Jun 138
 Mitsubishi CHC-445 printer, Feb 168
 Mitsubishi G370-10 printer, Feb 168
 Mitsubishi S340 printer, Feb 168
 Mitsubishi SC-7500 scanner, Jun 130, Jul 233
 Mobius 030 Accelerator board, Jul 210
 Mobius 030 Display System, Feb 17, May 132, Dec 117
 MockPackage Plus Utilities, Jul 264
 ModaVision, Feb 18
 Mode32, Nov 18, 275
 ModelShop, Feb 18
 Modems. See also Fax modems
 Comstation Four, Dec 18
 Hayes Personal Modem 2400plus, Dec 152
 Seta 2500 and 3500,

Jan 115
 V-Series Ultra Smartmodem 14400, Oct 20
 Money management. See Financial programs
 Money Manager, Mar 152
 Monitors, Feb 119, May 132, Oct 114
 24-bit color, Jan 152
 5000M thin-panel color display, Feb 17
 ClearView/LC Monochrome Display System, Feb 119

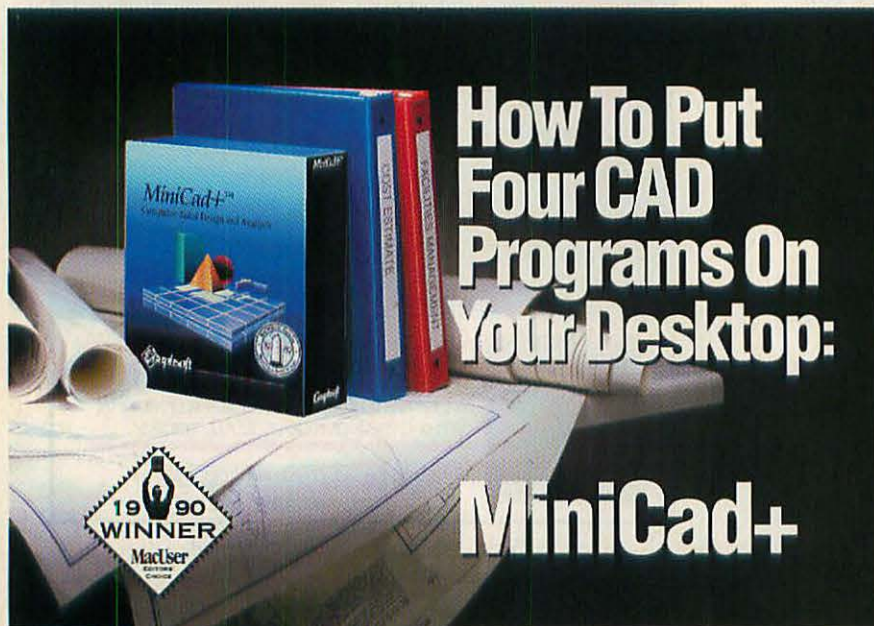
color, Oct 114
 ColorPage E16, Oct 97
 disabling with ResEdit, Feb 267
 expanding display area, Feb 263
 In Focus 5000M Direct View, Mar 101
 Lapis Full Page Display, Dec 115
 line on screen, Nov 275
 L-View Multi-Mode, Oct 166
 Macintosh 21" Color Display, Sep 127

Macintosh LC support for VGA monitors, Apr 18
 MaxAppleZoom, Jan 77, Feb 263, Oct 197
 MegaGraphics 4001 Rival, Feb 119
 Mirror ProView Trinitron, Feb 125
 Mobius 030 Display System, Feb 17, May 132, Dec 117
 monochrome, May 132
 MultiSync FG series, Dec 119
 Nanao Flexscan 9060S, Aug 161
 NEC MultiSync 3DS, Apr 18
 PageView GS, Feb 119
 Pixel-Flipper, Oct 197
 Private Eye miniature display, Apr 95
 QuickView Z21, Oct 166
 Radius Color Pivot, May 17, Jun 103, Oct 114
 Radius FPD, Jul 159
 Radius Pivot IIsi and Two Page Display IIsi, Feb 119
 VDT ordinance, Apr 87
 Montana, Jan 77
 More After Dark, Volume One, Dec 184
 More, Insights, Jan 259
 MountEm, Aug 189
 Mouse, Feb 42
 adjusting tracking, Jan 234
 Air Mouse, Feb 18
 alternatives to, Aug 67
 MousePenMac, Nov 255
 MPEG compression, Jun 18
 Mr. File, Jun 18, Aug 172
 Multi-Ad Search, Jun 99
 MultiFinder, Jan 237
 deactivating, Mar 196
 MultiGate 2000 and MultiGate Mac, Apr 130
 MultiGate Manager, Feb 152
 MultiLedger, Nov 186
 Multimedia, May 225, Nov 194. See also Video CD ROMs, Sep 255
 design tools, Nov 194
 Global Jukebox, Sep 141
 indexing utilities, Jun 99
 MediaMaker, Aug 154
 MediaNode, May 113
 ProNode device controller, May 113
 Video Publisher, May 113
 Multimedia Toolkit, Jan 101, Feb 178
 Multiple Master typefaces, May 18, Jun 99
 MultiPort Gateway, Apr 130
 MultiSync FG series monitors, Dec 119
 Music, Feb 160, Mar 85, Jun 146
 Book of MIDI, The, Apr 124
 CD Companion Series: Igor Stravinsky: The Rite of Spring, Aug 162
 Deck, Feb 160, Apr 156
 digital audio, Feb 160
 Global Jukebox, Sep 141

Ludwig van Beethoven Symphony No. 9, Apr 124
 MacProteus, Jan 188
 MIBAC Music Lessons, Nov 250
 MusiCard Maker, Apr 178
 Music Publisher, Dec 197
 SampleCell, Jun 169
 String Quartet, The: The Essence of Music, Mar 164
 MusiCard Maker, Apr 178
 Music Publisher, Dec 197
 MVP Footswitch, Feb 129
 MVP Mouse, Feb 129, Nov 255
 MyAdvancedDatabase, Sep 242
 MyTimeManager, Oct 20, Nov 261
 M.Y.O.B., Oct 193, Nov 186



Nalevanko, Tom, interview, Sep 107
 Nanao Flexscan 9060S monitor, Aug 161
 NEC CDR-72 CD ROM drive problems, Nov 17
 NEC MultiSync 3DS monitor, Apr 18
 NEC PC-VCR, Jan 101, Feb 178, Oct 154
 NEC SilentWriter2 990 printer, Jul 161
 NEC SilentWriter2 Model 90 printer, May 142
 Neotech Image Grabber board, Feb 178
 NetAtlas, Feb 152
 NetControl, Feb 152
 NetMap, Feb 152
 NetMinder Ethernet, Feb 152
 NetOctopus, Nov 17
 Net One MaxTalk, Apr 130
 NetUpdater, Feb 152
 Net Watchman, Dec 188
 Network Courier, Jun 17
 Network DiskFit, Jul 228
 Networks, Feb 152, Nov 202
 Carbon Copy Mac, Jun 105
 DreamNet, Dec 111
 Ethernet, Apr 130
 Ethernet LC Card and Ethernet NB Card, Mar 105
 EtherPrint, Jan 202
 FastPath 5 Ethernet gateway, Sep 137
 fax modem, Dec 115
 GraceLAN, Jul 244
 Hublet port repeater, Oct 20
 IBM PC-Macintosh file transfer, Sep 269
 Instant Update, Jul 163
 LocalPeek, May 18
 LocalSwitch multiport bridge, Jul 163, Sep 219
 MacBack 8000, Mar 171
 MacCon+30i Ethernet board, Jan 109
 MacCon+30i/Radius



1. Integrated 2D/3D CAD

MiniCad+ is the original award winning 2D/3D professional CAD package. It continues to set the standard for price and performance on the desktops of engineers and architects.

2. Database CAD

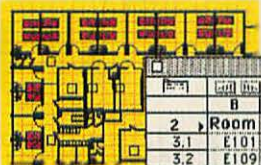
MiniCad+ has an integrated worksheet—literally, a spreadsheet and database in one—hot-linked to your drawings. Attach records such as type, cost or size and display at will. Compute area calculations, compile parts schedules and develop cost estimates.

3. Intelligent CAD

Our "Smart Cursor" automatically highlights, identifies and aligns relevant snaps, intersections, tangents and parallels. Snap to the precise point with more ease than you've experienced with any other program. We built the brains into MiniCad+ so you can think about more important things.

4. Programmable CAD

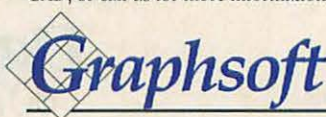
Don't be confined by your CAD program. Extend the capability of MiniCad+ by developing your own palettes with our macro language. We've included a wide variety of special-topic palettes with MiniCad+; others are available from third-party vendors.



	B	C	D	E	F
2	Room	Area	Cost	Total	
3.1	E101	960.12	\$96	\$92184	
3.2	E109	512.56	\$51	\$26272	
3.3	E115	245.64	\$25	\$6034	
3.4	E111	469.26	\$47	\$22020	
3.5	E103	917.28	\$92	\$84141	

Draw On Our Experience

Packed with features, the only thing small about MiniCad+ is the price. As a professional, you owe it to your desktop to ask your favorite distributor for the 1990 MacUser Editor's Choice winner in CAD, or call us for more information.



8370 Court Ave., Suite 101 • Ellicott City, MD 21043 • (301) 461-9488 • FAX (301) 461-9345

Circle 46 on reader service card.



There's no better way to communicate than PersonToPerson.



Asanté™, the leader in Macintosh networking introduces an array of messaging tools that bring the personal touch back to inter-office communication.

Tools that make this the only sure way to get your message delivered.

With PersonToPerson™ software, you can now send voice mail messages across the network, check whether a co-worker is in or out of the office, or use the electronic Post-it™ Note window to leave someone a message. You also get a built-in calendar with timed reminders for appointments. And

the personalized screensaver lets you leave messages on your screen while you're away from your desk.

It's all done without the added expense of a dedicated Macintosh® server.



[Express Out Mailbox]



[Personalized Screensaver]



[Built-in Calendar]



[Electronic Notepad]



[In/Out Board]

And our simple, one-button installation loads the program as an INIT.

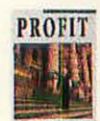
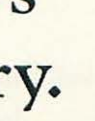
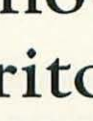
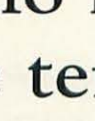
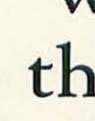
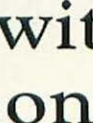
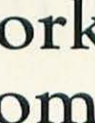
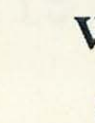
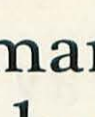
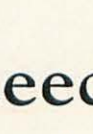
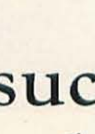
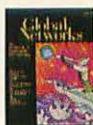
And because PersonToPerson

ASANTÉ
ALL THE RIGHT CONNECTIONS™

automatically sends messages when you attach your Macintosh to the network, it's a great tool for PowerBook users who create and send messages when out in the field.

So now your company or departmental work group can interact the best way there is—PersonToPerson.

Resellers: Asanté products are available from Ingram Micro, Tech Data and Macamerica.



To succeed in
worldwide
markets,
it helps to
work with
someone
who knows
the territory.



Where is the next growth market for information technology?

Everywhere.

The changes that are occurring every day, in every corner of the world, point to a pivotal decade that will change forever the way—and where—you do business. In fact, research shows international sales are expected to account for almost 80% of total worldwide sales by the year 2000.*

Where will you find the resources to compete worldwide?

Right here.

You see, no one knows the world of information technology better than we do. After all, we compiled the industry's first database on computer installations way back in 1964. And in 1972, were the first to launch an international publishing operation. Since then, our domestic titles have grown up to become leaders in their fields, as have our international books.

And we now publish nearly 150 titles in 50 countries, making us the largest information technology publisher in the world.

But we know you need more than ad pages. So we offer more.

Through our World Expo, we can send you to 58 different trade shows all over the world. Or, get you the information you need about emerging overseas markets through IDC research centers in 35 different countries.

You can even customize a total marketing communications program that includes ad space worldwide, direct marketing using select industry databases, international media buying help, a newswire connection to 800 editors around the world, and much more, through our Market Access Program.

Providing this kind of access is what we do best. So why not call us and find out how we can get you where you want to be? Contact your local IDG rep for information about how you can qualify for the Program.

Because when you get to as much of the world as we do, there isn't anywhere you can't grow.



The World of Information Technology

*Source: International Data Corporation © 1991 International Data Group

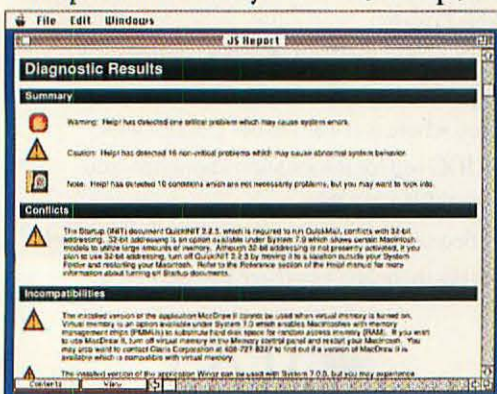
Get
Help!
at Mac Expo
Booth #5522



Used Regularly, Prevents Unwanted Conflict Build-up.

Why wait for your Mac to bomb when you can keep it running smoothly with a little bit of Help!™?

Help! pinpoints configuration conflicts, incompatibilities, and other problems and shows you how to fix them right at your desktop. You'll eliminate system errors, lock-ups, and system bombs.



Help! quickly pinpoints system configuration problems and shows you how to solve them.

*Help! utilizes SMART Technology™ from Teknosys.

programs, INITs, cdevs and hardware products. It's the only Mac product that lets you solve these problems at your desktop: *Startup document conflicts • Incompatibilities between hardware, system software and applications • Memory problems • Improperly installed files • Duplicate or damaged files • Operating system problems up to and including System 7.0.*

Help! is the first intelligent application with a built-in knowledge-base* of problem information covering over 2,000 software



The sooner you get Help! the sooner your Mac will run at peak performance. Single user version just \$149. To order call:

1-800-873-3494

Outside the U.S.A. Call:
1-813-620-3494
Visa/MC/Amex

Help!

Every Mac User Needs It.

Teknosys inc.

3923 Coconut Palm Drive, Suite 111, Tampa, FL 33619

Circle 142 on reader service card

Ethernet/color board, Sep 19
 Mac-to-Mac, Oct 191
 management products, Feb 152
 NetOctopus, Nov 17
 Net Watchman, Dec 188
 Network DiskFit, Jul 228
 NuBus gateways for IBM's SNA, Nov 18
 NuvoStar network hub, Nov 157
 Public Folder, Sep 269
 SNMP protocol adopted by Apple, Aug 89
 StarController, Jul 163
 TalkManage, Jul 18
 TCP/Connect II, Jan 207
 Timbuktu, Jun 23, 105
 WatchTower, Aug 89
 Network SuperVisor, Feb 152
 New Grolier Electronic Encyclopedia, 1990 Edition, May 168
 NewLife 25 and 33 accelerator boards, Jul 210
 Newsletters, Mac-related, Jul 141
 Nexta, Jul 155
 Nextstation and Nextcube, Jan 160
 NightWatch, Jun 122
 Niscan Spectra scanner, Nov 242
 Nisus, Feb 215, May 36, Sep 160
 Norton Utilities for the Macintosh, The, Feb 213, Mar 130, Jun 209, Aug 189
 Notebook computers, May 23
 Notebook System series portables, Sep 19
 Nova hard drive, Mar 136, Sep 184
 Novel-writing AI system, Jul 155
 Now Utilities, Mar 130, Jul 239
 NuBus expansion chassis, Jan 17
 NUDIST, Jun 109
 NumberMaze Decimals & Fractions, Oct 173
 NuTek Macintosh clone, Apr 116
 Nutmeg 19 Color System monitor, Oct 114
 Nutmeg 19 monitor, May 132
 Nutmeg 19G monitor, May 132
 Nutmeg/Xerox Full Page Display, May 132
 NuVision video board, Feb 178
 NuVista+ video board, Feb 178
 NuvoLink series Ethernet connectors, Apr 130
 NuvoStar network hub, Nov 157

Oasis, Jul 221
 OcéColor printer, Feb 168
 OCRs, Nov 169

ReadRight, Feb 18
 Typist handheld, Feb 231, Jun 154, Nov 171
 Offline, Apr 178
 Okidata OL840 LED Page Printer, May 142
 Olsson, Sören, interview, May 87
 OmniMedia 3c scanner, Jun 130
 OmniPage, Nov 169
 On-Command, Jan 40
 On Cue, Mar 130
 Online services list of, Jan 234
 Prodigy, Jan 69, Mar 63, Apr 51, Jun 17, Jul 40
 reader survey, Oct 103
 On Location, Mar 130
 One Shot, Jul 249
 One-Step, Jun 146
 OnTrack, Mar 152
 Open Scripting Architecture, Nov 159
 Optirase erasable optical drive, Jun 138
 OptiServer 600 erasable optical drive, Jun 138
 Optix, Nov 18
 Oracle Card, Apr 17
 Oregon Trail, The, Oct 176
 Organizer, Dec 152
 Org Plus for Macintosh, May 187
 Orient, The, Sep 255
 Outbound Notebook System family, Nov 153, Dec 167
 Outbound portable, Feb 73
 Outdoor and Vacation Adventure Guide, Apr 124
 Outliners
 Inspiration, Dec 195
 More, Jan 259

P

PageBlast PostScript rasterizer, Apr 99
 Page Director, Feb 117, May 170
 Page layout. See Desktop publishing
 PageMaker. See Aldus PageMaker
 PageSpeed, Sep 129
 PageView GS monitor, Feb 119
 PageView Multi-Mode monitor, May 132
 Painter, Sep 131
 Panorama II, Aug 85
 Paper Keyboard, Jul 234
 Pararena, Jan 77
 PassProof, Oct 155
 Passwords, finding forgotten, Aug 172
 PC. See IBM PC
 PCPC II 19 Display System, Oct 114
 PCPC CGC II/24 display board, Jan 152
 PC Scan 3000 scanner, Oct 146
 PC-VCR, Jan 101, Feb 178, Oct 154
 Peacock, Jun 190
 Pentax IQ Scan scanner, Oct 146
 People's Seismograph

Array, May 109
 Peripheral Vision Storage PV-250T tape drive, Nov 176
 Personal Color Scanner, Jun 130
 Personal FileLock, Jun 122
 Personal Finance, Mar 152
 Personality, Feb 222, Jun 209
 Personal Label Printer, Aug 87
 Personal LaserWriter LS printer, May 103, 142
 Personal LaserWriter NT

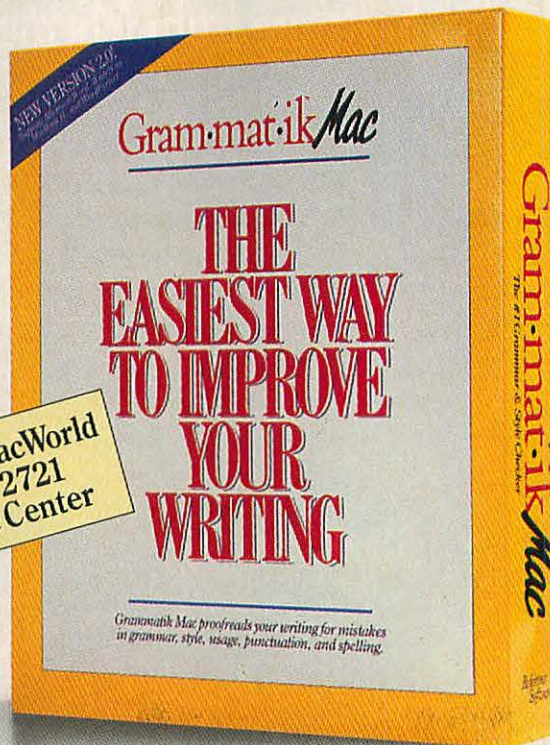
and SC printers, May 142
 Personal Librarian, Jul 159
 Personal Press, Aug 159
 Personal Training Systems, Dec 199
 Personal Vision video board, Feb 178
 Phaser II PXI printer, Nov 151
 Phaser II SX printer, Mar 105
 PhaserJet PXI printer, Aug 85
 Phaser II PX printer, Feb

168, Mar 105
 PhoneNet Card for Ethernet, Apr 130
 PhoneNet CheckNet, Feb 152
 PhoneNet Liaison, Feb 152, Apr 130
 Photo editing, Apr 144, Nov 291, Dec 233
 Adobe Photoshop, Sep 135, 248, Nov 291
 Aldus Digital Darkroom, Sep 226
 ColorStudio, Jan 144, Apr 144, Sep 135

Enhance, Nov 231, 291
 Picture Desk, Aug 81
 Photon Paint, Apr 144
 Photoshop. See Adobe Photoshop
 PhotoYCC color standard, Feb 129
 Phovos 400C scanner, Aug 167
 Phovos 600GS scanner, Aug 87, Oct 146
 PictureBook+, Jun 99
 Picture Desk, Aug 81
 Pinnacle Micro REO-130 continues

Great Grammar,

See Us At MacWorld
 Booth #2721
 Moscone Center



MacUser
 ★★★★★1/2

Guaranteed.

Grammatik™ Mac is the #1 grammar and style checker for the Macintosh®. It's so effective, we guarantee it will make your grammar great, your memos more memorable, and your proposals more professional, or your money back.*

Grammatik Mac proofreads your writing for thousands of errors in grammar, style, usage, punctuation, and spelling. It gives you instant feedback, on-line grammar and style help, and even lets you add your own writing rules. All of which makes you a better writer, faster. **Grammatik Mac**
 The #1 Grammar & Style Checker

Reference Software

Reference Software International, 330 Townsend Street, Suite 119, San Francisco, CA 94107 (415) 541-0222. *See your dealer for details. Grammatik is a trademark of Reference Software International. © 1991

and REO-650 erasable optical drives, Jun 138
 Pivot monitor, May 132
 Pixel-Flipper, Oct 197
 PixelGrabber video board, Feb 178
 PixelPaint, Apr 144
 PixelPaint Professional, Apr 144, Sep 209
 Insights, May 235
 PixelView I and II monitors, May 132
 Platinum hard drive, Mar 136
 Platinum PD series hard

drives, Jul 184
 Playmaker Football, Feb 220
 PLI CD-ROM drive, Oct 184
 PLI PL Turbo series hard drives, Jul 184
 Plottergeist, Feb 236
 PL Quantum hard drive, Sep 184
 PL Turbo hard drive, Mar 136
 PocketDrive, Dec 111
 PocketHammer hard drive, Mar 136, Sep 184

Pocket Info Pac, Apr 95
 Point of View, Jan 214
 Police Quest, Sep 20
Portables
 Colby ClassMate, Sep 141
 Outbound Notebook System family, Feb 73, Sep 19, Nov 153, Dec 167
 PowerBook series, Dec 130
 PowerBook series, Dec 130
 PowerCache ILC accelerator board, Jul 210

PowerCache accelerator board, Dec 117
 PowerCard 030 accelerator board, Jul 210
 Power Drive 150 Tape drive, Nov 176
 PowerDrive 3201 hard drive, Jul 184
 PowerDrive hard drive, Mar 136, Sep 184
 PowerDrive Removable drive, May 124
 PowerDrive series hard drives, Jul 184
 Power Key, Dec 152

Power supply protection, Feb 275
Power switch, unexpected start-ups, Jul 263, Dec 225
PrecisionColor 8X and 24X NuBus graphics adapter boards, Dec 115
PrecisionColor graphics board, Nov 153
Prepress, Jul 23, Oct 138
 Introduction to Digital Color Prepress, An, Jan 231
Presentations
 LiteShow II, Sep 237
 Magic, Sep 137
 Presenter Professional, Jan 18
 Presenter Professional, Jan 18
Pressure-sensitive tablets, Apr 144
Printers, Feb 168, May 142, Dec 156
 alternative print media, Sep 285
 BLP Elite, Nov 226
 Business LaserPrinter IIS, Feb 200
 color, Feb 168
 colorizing laser output, Sep 285
 Colormate PS Model 40, May 17
 ColorPoint PSX, Nov 18
 CrystalPrint Publisher, Jan 42
 DynoPage, Sep 230
 Ektaplus 7016PS, Apr 18
 enhancing images, Apr 195, Dec 233
 envelope printing, Apr 99
 Epson America EPL-7500, May 105
 Error -42 message, Jul 263
 EtherPrint, Jan 202
 fixing uneven toner distribution, Oct 212
 GCC PLP II, May 18
 HP Deskjet, Jul 18
 HP DeskWriter C, Oct 91
 HP LaserJet IIP, Feb 42, May 142
 HP LaserJet III, Jul 157, Dec 156
 HP LaserJet IIIP and IIIs, Jul 157, Dec 156
 HP PaintWriter, Jun 111
 HP PaintWriter XL, Feb 168
 ImageWriter II, Sep 270
 Kensington Printer Muffler, Dec 152
 Kodak Diconix Color 4, Apr 97
 labels, Sep 285
 LaserJet IIP, May 18
 LaserMaster 800, 1000, 2000, Dec 156
 LaserMax 1000, Mar 161
 LaserWriter II light stays on, Feb 267
 PageBlaster PostScript rasterizer, Apr 99
 paper suppliers, Sep 285
 Personal LaserWriter LS, May 103, 142
 Personal LaserWriter NT and SC, May 142

personal page printers, May 142
 Phaser PX, Feb 168, Mar 105
 Phaser II PX and Phaser II SX, Mar 105
 Phaser II PXi, Nov 151
 PhaserJet PXi, Aug 85
 QMS-PS 410, Feb 200, May 142
 QMS-PS 815, Jul 161, Dec 156
 QMS-PS 815 MR, Sep 20, Dec 156
 QMS-PS 825 MR, Sep 20
 QMS-PS 2000, Jun 111
 Silentwriter2 990, Jul 161, Dec 156
 StyleWriter, May 103, Sep 272, Dec 63
 SuperSpool, Sep 272
Printware 720 IQ Pro-11 printer, Dec 156
Private Eye miniature display, Apr 95
Procom Technology MD420 hard drive, Jul 184
Procom Technology MD Series hard drives, Mar 136, Sep 184
Procom Technology MEOD-650 erasable optical drive, Jun 138
Procom Technology MRD 40 removable-cartridge drive, May 124
Procom Technology MTD1000 hard drive, Jul 184
Procom Technology PMT60/M and PMT150/M tape drives, Nov 176
 Prodigy, Jan 69, Mar 63, Apr 51, Jun 17, Jul 40
ProDisc hard drive, Mar 136
ProDisc removable-cartridge drive, May 124
Professor Mac, Apr 177
ProfitAbility Professional, Nov 186
Programming
 CodeCheck, Nov 240
 Series Developer, Mar 179
Pro hard drive, Mar 136
Project management, Mar 211
 FastTrack Resource, May 18
 MacProject II, Jun 231, Aug 171
 MicroPlanner Manager, Oct 20
 Microsoft Project, Sep 129, Nov 210
 Schedule Publisher, Oct 20
ProModem 24/96 and 9600M Plus fax modems, Aug 114
ProModem MiniFax fax modem, Aug 114
ProModem Ultima fax modem, Aug 114
ProNode device controller, May 113
 ProPlus Accounting,

Cover All Your Bases with Utility Software from Microcom

When working on a computer today, there are a lot of data problems that can foul up your game plan. To avoid the disabled list, Microcom offers an all-star team of data recovery and security utilities for the Macintosh. Utility software from Microcom can prevent aggravating and costly disruptions of your work. From recovery of damaged disks and files or files you've accidentally deleted to ongoing protection against unauthorized access and computer virus infection, we can solve your problems. See your favorite software dealer today for the grand slam lineup of Microcom utility products or call us about our site licensing program. You'll hit a home run every time with utility software from Microcom.



© 1991 Microcom Systems Inc. Microcom and Virex are registered trademarks and Microcom 911 Utilities, Complete Undelete, and Citadel with Shredder are trademarks of Microcom, Inc.

Microcom, Inc.

P.O. Box 51489
 Durham, NC 27717
 (919) 490-1277 ext. 1015



Powerful
Disk and File
Recovery
Tools
for the
Macintosh

The leader
in Virus
Prevention,
Detection,
and Treatment

The Ultimate
Tool for
Recovering
Files Thrown
in the Trash

A Complete
Security
Toolbox
for the
Macintosh

Circle 41 on reader service card.

Nov 186

Protector Shark, Jun 190
Protege hard drive, Sep 184
ProVideo 32 video board,
Feb 178
ProView/8 monitor,
Oct 114
Pserve, Feb 152
Public Folder, Sep 269
Publish-It Easy, Oct 20
Punchdown block, defined
at last, May 36
PuzzleMaker, Aug 171
Pyro, Mar 130

Q

QCT-Bone Mineral Density
Analysis, Mar 103
QMS-PS 410 printer, Feb
200, May 142
QMS-PS 815 printer, Jul
161, Dec 156
QMS-PS 815 MR printer,
Sep 20, Dec 156
QMS-PS 825 MR printer,
Sep 20
QMS-PS 2000 printer,
Jun 111
Quadra 700 and 900,
Dec 140
Quality Artware, Feb 240
QuarkXPress, Feb 46, 142,
184, May 17, Jul 17
document recovery,
Jul 264
enhancing gray shading,
Apr 195
Insights, Feb 283
Page Director, Feb 117
proofing spot-color text,
Feb 270
retaining imported Word
document's style,
Oct 214
trapping, May 159,
Aug 31
Xtensions, Jul 165
QuickCapture video board,
Feb 178
QuickColor Graphics
Engine accelerator
board, Jan 136
Quicken, Mar 152, Oct 20,
Dec 181
QuickKeys, Mar 130, Apr
138, Jul 39, Nov 159
QuickKeys², Jan 178
QuickImage 24 video
board, Feb 178,
Oct 164
QuickLock, Jun 122
QuickMail, May 18,
Sep 269
QuickTime, Aug 80,
Sep 25, 154,
Nov 194
QuickView Studio video
board, May 107,
Feb 178
QuickView Z21 monitor,
Oct 166
Quik30 accelerator board,
Jul 210
Quill, Jan 77
QuitFinder FKey, Oct 197
Qume QM880 and
QM885 monitors,
May 132
Quotemaster Plus/Mac,
Jun 189

R

Racal-Interlan NIA310
MacConnect Ethernet
connector, Apr 130
Radius 68040 accelerator
board, Apr 17
Radius Accelerator 25
board, Jul 210
Radius Color Display
monitor, Oct 114
Radius Color Pivot
monitor, May 17, Jun
103, Oct 114
Radius FPD monitor,
Jul 159
Radius Rocket accelerator
board, Dec 167
Radius TPD/19 and TPD/
21 monitors, May 132
RadiusTV video board,
Feb 178
Radius Video Collage
Engine, Jan 99
Rags to Riches for Ac-
counting, Nov 186
RagTime, Jun 18
RamDisk +, Oct 197
RandomFonts, Jan 103
Random House Encyclope-
dia, Electronic Edition,
May 168
RasterOps 8LC and 8XLI
System monitors,
Oct 114
RasterOps 24L display
board, Jan 152
RasterOps 24S graphics
accelerator board,
Jan 136
RasterOps 24si color/
accelerator board,
May 111
RasterOps 24STV video
board, May 111
RasterOps Accelerator
board, Jan 136
RasterOps display boards,
Feb 119
Ray Dreams Designer, Mar
97, Sep 244
Read My Lips, Nov 246
Reader, Jan 77
ReadingMaze, Nov 233
Read-It Personal OCR,
Nov 171
Read-It Pro OCR, Nov 171
ReadRight for Macintosh
OCR, Nov 171
ReadRight OCR, Feb 18
ReadStar II Plus for the
Macintosh OCR,
Nov 171
Real Estate Investment
Analysis, Jul 250
Real estate programs, Mar
152, Jul 250
Recognize OCR, Nov 171
Redux, Mar 130
Relax Technology 60 Tape
Vista and 160 Tape
Sierra tape drives,
Nov 176
Relax Technology 250
Tape Vista tape drive,
Nov 176
Relax Technology Mobile
42 removable-cartridge
drive, May 124
Remember, Nov 261

Reminder programs,
Nov 261

Removable-cartridge
drives, May 124
Bernoulli 90, Oct 93
Bernoulli series, Jun 18
Bernoulli Transportable,
Feb 234
Bernoulli Transportable
90, Dec 190
compatibility among
different brands,
Aug 189
DataPak 88 series,
Jun 101
formatting, Aug 189
Infinity 88 Turbo, Jun 101
MicroNet MR-90,
Jun 101
Microtech R50, Feb 234
SyQuest, Feb 113
SyQuest 88MB, May 17
SyQuest SQ5110,
Jun 101
Rendezvous Plus, Nov 261
Report Ideas, Jan 218
ResEdit, Jun 203, 209
Resource editing, Jun 219
Restart switch, replacing,
Mar 195
ResumeMailer, Jul 249
Revolución, Apr 124
Rich Text format, Dec 17
Right Time, The, Mar 152
RightWriter for the Mac,
Aug 138
Rival, Feb 211, Mar 130
RoboSport, Sep 217
Rodime Systems R45 Plus
removable-cartridge
drive, May 124
ROMs, 32-bit support,
Nov 18

S

SAM, Feb 211, Mar 130
SAM Intercept, Apr 192
SampleCell, Jun 169
Sankyo MT-500-RF and
MT-1000-RF tape
drives, Nov 176
Saturn V, Dec 117
SBT Mac Series Six Plus,
Nov 186
Scan 300/Color scanner,
Jun 130
ScanMan Model 32 hand-
held scanner, Jun 154
Scanmaster 3 scanner,
Jun 130
Scanners, Jun 130, 154,
Oct 146
aligning documents,
Nov 289
Apple OneScanner,
Dec 109
Chinon America DS-3000
Color Scanner, Nov 242
color, Jun 130
Enhance, Nov 231
enhancing images,
Dec 233
Epson America ES-300C,
May 164, Jun 130
Expresso slide scanner,
Nov 153
gray scale, Oct 146
hand-held, Jun 154
HP ScanJet IIc, Nov 157
LightningScan Compact,
Dec 152, 172
Marstek M800, Jan 17
Mitsubishi SC-7500,
Jul 233
Niscan Spectra, Nov 242
Phovos 400C, Aug 167
Phovos 600GS, Aug 87
scanning slides and
negatives, Apr 192
UMAX UC300, Jan 99
Schedule Publisher, Oct 20
Scheduling
Meeting Maker, Nov 239
Microsoft Schedule+,
Nov 239
Schedule Publisher,
Oct 20
WordPerfect Office,
Dec 170
Scientific applications,
Aug 130
Scion Image Systems
Image Capture Board,
Feb 178
Scrapbook, Jan 237
Screen Locker, Jun 122
Screens. See Monitors
Screen savers
After Dark, May 195, 218
More After Dark, Volume
One, Dec 184
Protector Shark, Jun 190
ScriptEdit, Jun 190
Scrolling speeds, Mar 195
SCSI Info, Oct 198
SCSI Probe, Mar 197, Aug
189, Oct 197
SCSI Tools, Mar 197,
Aug 189
Sculpt 4D, Nov 151
Secret Service follies,
Mar 51
Sectel 2500 and 3500
phone security, Jan 115
SecureInit, Jun 122
Security, Jun 122
A.M.E., May 172, Jun
122, Sep 20
Citadel, Sep 20
locking floppy disk drive,
Sep 55
MasterKey, Aug 172
PassProof, Oct 155
Selectics, Dec 117
Sensible Grammar,
Aug 138
Sentinel, Jun 122
Serius Business, Jan 103
Serius Developer, Mar 179
Server hard drive, Mar 136
Service Industry Account-
ing, Nov 186
ShadowGraph, monitor,
May 132
Shareware, Jan 77, Oct 197
AppDisk, Oct 197
CheckList, Jan 18
Compact Pro, Oct 197
FlashWrite, Dec 152
MaxAppleZoom, Jan 77,
Feb 263, Oct 197
Pixel-Flipper, Oct 197
QuitFinder FKey, Oct 197
RamDisk +, Oct 197
SCSI Info, Oct 198
SCSI Probe, Mar 197,
Aug 189, Oct 197
Switch Boot, Oct 197
Temperament, Oct 197
Sharp Ink Jet Color Image
continues

EXTRA! EXTRA!
Read All About It!

It's the latest and greatest news in printing since Gutenberg!

STOP THE PRESS PRINTERS

POSTSCRIPT LEVEL 2 WORK GROUP PRINTER



NOW JUST \$4488
Lease only \$158/mo.

QuickKor 1X7 Laser

- 4 MB RAM
- Up to 16 ppm
- SCSI port
- 400 dpi
- 11 X 17 tabloid size
- 35 Genuine Adobe PostScript fonts
- Super fast RISC controller

PostScript Level 2

Exclusive Story from MacFriends!

MACKY'S MONEY SAVERS

Buy our QuickKor TS or 1X7 Laser Printer and get a 40 MB hard drive loaded with 79 fantastic fonts!

JUST \$388

QuickKor TS

POSTSCRIPT LEVEL 2 PERSONAL LASER



WOW! NEW PRICE!!

What news! Since the manufacturer dropped the price, I can afford to move up to the next level!

NOW JUST \$1888
Lease only \$166/mo.

- 35 genuine Adobe P/S fonts
- Super fast RISC controller
- Compact design
- 2 MB RAM upgradeable to 10
- SCSI port for adding a hard drive
- Auto switch between 4 optional paper trays

Ask About QuickKor's Extended Service

800 331-1322

24 hour QUICKFAX (503) 286-8710
Local: (503) 286-9350

Mac Friends

First 100 orders receive \$238 font offer FREE! HURRY! Call Today!!

AMERICA'S "MAC ONLY" STORE

FEDERAL EXPRESS

QuickKor

Circle 109 on reader service card

BeagleWorksTM On The C



Beagle Makes Its Mark



Exclusive to BeagleWorks is a revolutionary technology called **In-Context EditingTM**. This gives you the ability to access one file from within another by simply double-clicking. For

example, if you have placed a graphic from a

paint file into a word processor document and decide to make a change, all you need to do is double-click on the graphic in the word processor. The Paint tools are added to the tool bar, the graphic becomes active and any changes you make are also made to the original file.

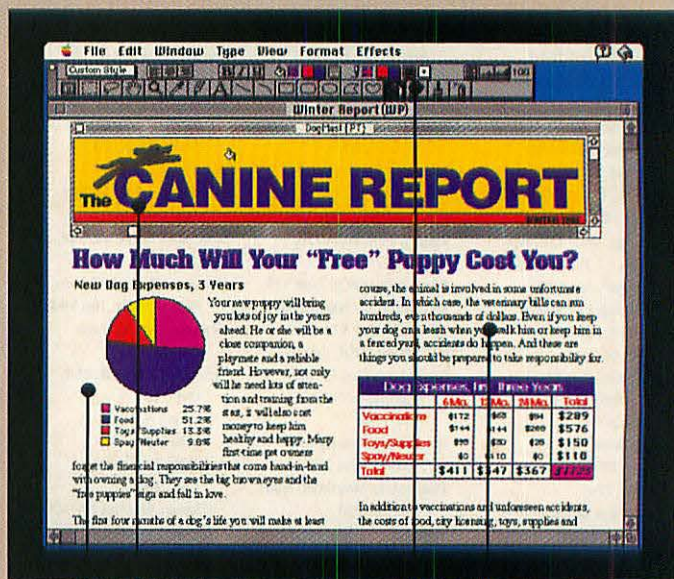
BeagleWorks, In-Context Editing, Quick Publish and Quick Subscribe are trademarks of Beagle Bros, Inc. Patent Pending. Beagle Bros is a registered trademark of Beagle Bros, Inc. All other trademarks are the property of their respective holders. © 1991 Beagle Bros, Inc.

A Mac's Best Friend

With the introduction of BeagleWorks, the true meaning of integrated software has finally been defined. BeagleWorks includes seven modules so fully integrated you can easily access the **Word Processor, Database, Spreadsheet, Chart, Paint, Draw and Communications modules** from anywhere in the program.

The word processor features irregular text wrap, multiple columns anywhere on a page and the Microlytics[®] 110,000 word Spelling Checker and 660,000 word Thesaurus. The Paint and Draw modules let you use up to 256 colors. The Spreadsheet boasts an automatic sum tool, as well as in-cell editing.

BeagleWorks has these and many other powerful features commonly found in stand-alone programs. It's easy for the novice to use, yet you won't outgrow its capabilities. Since it requires only 1 megabyte of RAM to run, BeagleWorks is an excellent solution for any Macintosh user.



In-Context EditingTM

Allows editing of one file from within another by simply double-clicking.

Multiple Columns

Can be turned on or off anywhere on the page.

Automatic Irregular Text Wrap

Text takes on shape of the graphic.

Common Tool Bar

Frequently used tools are easily accessible.

Has A Leg Up Competition

\$99.95

**Upgrade
Offer!***

Integrated Software: Who Leads The Pack?

	BeagleWorks™	ClarisWorks™	GreatWorks™	Microsoft Works®
System 7 Savvy	YES	NO	NO	NO
In-Context Editing™ (multiple documents)	YES	NO	NO	NO
Paint module	256 Colors	NO	Black&White	NO
Common tool bar w/module-specific tools	YES	NO	NO	NO
Automatic irregular text wrap	YES	NO	NO	NO
Multiple columns can be turned on/off anywhere on the page	YES	NO	NO	NO



Savvy: You Bet! No Bones About It

BeagleWorks is System 7 Savvy: it takes advantage of everything System 7 has to offer, including Publish & Subscribe™! BeagleWorks even simplifies the process with Quick Publish™ and Quick Subscribe™ keyboard shortcuts. And you can even use Publish & Subscribe under **System 6.0!**

Old Dog / New Tricks

BeagleWorks is definitely marking its territory in the integrated marketplace. But we're not exactly a new pup when it comes to integration. Beagle Bros has been publishing software for eleven years. Beagle Bros also wrote AppleWorks 3.0, one of the first integrated programs for the Apple computer.

UPGRADE from ClarisWorks, GreatWorks, Microsoft Works, RagTime, Desk, AppleWorks 3.0 or AppleWorks GS for \$99.95 plus shipping. Contact MacZone (800-248-0800), MacConnection (800-334-4444), Learning Services (800-877-9378), Quality Computers (800-443-6697) or Beagle Bros (619-452-5500) for more information.

Champion Breed

BeagleWorks is the clear winner overall when it comes to true integration and powerful features. If you currently own an integrated program, it's easy to upgrade for only \$99.95*. Suggested Retail Price \$299.95. Call your favorite dealer or mail order house to get the most revolutionary product available for the Macintosh. Join the pack and start changing the way you use your Macintosh today!

See us at Macworld Expo
Booth # 112, Moscone Center

BeagleWorks™

The true meaning of integration.™



Beagle Bros, Inc.

6215 Ferris Square, Suite 100
San Diego, CA 92121
(619) 452-5500
FAX (619) 452-6374

Circle 6 on reader service card

Your Illustrator® and FreeHand® images in 3D!

with
Satellite 3D™

The program you were waiting for! Satellite lets you put your vectorial artwork created with Adobe Illustrator® and Aldus FreeHand® into 3D perspectives, giving them a depth, computing the illumination of the surfaces and saving it back in numerous formats like Illustrator, PICT II and EPS.



As they are not converted into bitmap but remain vectorial, the perspectives created with Satellite can be read and edited in most graphics programs.

A must for illustration, design, cartography, packaging and all applications of PostScript®.

For only \$199, give a new dimension to your artwork!

Call CALLISCOPE today
tel. (800) 645-8550 - fax. (415) 964-8336
(415) 964-8550 - Mountain View, CA

In Europe, please call CALLISCOPE - Montpellier (France)
(33) 67 22 55 55 or fax (33) 67 22 54 87



- Printer, Feb 168
Sharp JX-100M handheld scanner, Jun 154
Sharp JX-300, JX-450, and JX-600 scanners, Jun 130
Sherlock Holmes, Sep 255
Shortcut, Mar 130
Siclone SI3033 and SI3050 accelerator boards, Jul 210
Sierra hard drive, Mar 136, Sep 184
Sigma Bullet 3040 compression board, Apr 95
Silentwriter2 990 printer, July 161, Dec 156
Silhouette Trackball, Dec 152
Silverscanner, Jun 130
SilverView monitor, May 132
SimAnt, Dec 17
SimEarth, Jun 162, Sep 269
SimMac, Nov 253
SIMMs, replacing, Oct 212
Simulation of Acute Myocardial Infarction, A, Apr 124
Sketch, Oct 91
Slides, scanning, Apr 192, Nov 153
Small Business Accounting System, Nov 186
Smart Alarms, Nov 261
Smart Art, Aug 122
SmartCards, May 196
Sniffer, Feb 152
SoftPC for the Classic/LC IBM PC emulator, Nov 224
Software Bridge Macintosh, Apr 173
Software FPU, Sep 274
Solarian II, Jan 77
Soliloquy, May 105
Sound. See also Music
additional beep stored in Scrapbook, Nov 289
At Your Service, Nov 246
digital audio, Feb 160
Interface Agent, Jan 107
MacRecorder, Nov 276
Read My Lips, Nov 246
recording with Sound Control Panel, Nov 276
SoundEdit, Jul 17, Nov 276
SoundMaster, Jan 77, Jun 209
Southwest Collection, Aug 172
Space Quest IV, Sep 20
Spaceship Warlock, Sep 129, Oct 180, Dec 152
Specialized Computer Systems NTSC Converter, Feb 178
SpectreScan, Jun 130
Spectrum/8 LC and Spectrum/8 si display boards, Jun 17, Jul 155
Spectrum/24 PDQ accelerator board, Jan 136, 152
Spectrum/24 Series III accelerator board, Jan 136, 152
SpeedLink series Ethernet connectors, Apr 130
SpeedPlanner, Sep 129
Spinnaker Plus, Nov 194
Spreadsheets. See also Microsoft Excel
Lotus 1-2-3 for the Macintosh, Aug 85
Masquerade, Oct 182
Wingz, Jul 266
SpreadSheets, Dec 152
Spreadware Accounting, Nov 186
Spyglass Dicer, Transform, and View, Mar 172
Stained Glass, Jan 77
StarCommand, Feb 152
StarController network hub, Jul 163
StarDrive 45RX removable-cartridge drive, May 124
StarDrive 150TX tape drive, Nov 176
StarDrive DX hard drive, Mar 136
StarDrive hard drive, Sep 184
Statistics
KaleidaGraph, Sep 253
StatView Student, Nov 244
StatusMac, Feb 152
StatView, Oct 95
StatView Student, Nov 244
Stealth 425Q hard drive, Jul 184
StickyKeys, Jul 263
Stingray Ergonomic Trackball, Sep 143
Stock market investment programs, Mar 152
Stock Watcher, Mar 152
Storage Dimensions
internal hard drives, Feb 119
StrataVision 3d, Jun 18
String Quartet, The: The Essence of Music, Mar 164
Studio/8, Apr 144, Jun 182
Studio/32, Apr 144, 154
StudioVision, Feb 160
Stuffit, Jan 235
Stuffit Deluxe, Jun 122, Jul 222
StyleWriter printer, May 103, Sep 272, Dec 63
Suitcase II, Feb 266, Mar 130, May 152, Nov 278
increasing limit on files open, Jul 163
SUM II, Mar 130, Jun 122, Aug 189
Sumo Systems SSER50 removable-cartridge drive, May 124
SuperBaby hard drive, Sep 184
SuperClock, Jan 77
SuperDisk, Apr 18
SuperDrive, Sep 269
SuperImage, Apr 124
SuperMac Technology 16" Trinitron Display, Oct 114
SuperMac Technology 19" Dual Mode Trinitron Display, Oct 114
SuperMac Technology 19" Platinum Display and Platinum Two-Page Display, May 132
SuperMac Technology 19" SuperMatch Color Display, Oct 114
SuperMac Technology 21" SuperMatch Two-Page Color Display, Oct 114
SuperMac Technology Graphics Accelerator board, Jan 136
SuperSpool, Sep 272
SuperSqueeze, Jan 17
SuperStacks contest, Apr 124
Surge protectors, Feb 275, Mar 196, Jul 46, Nov 39
Swift hard drive, Mar 136
Switchboard keyboard, Feb 198
SyncSatellite router, Dec 18
SyQuest 88MB removable-media drive, May 17
SyQuest cartridges, data recovery service, Jun 18
SyQuest SQ5110 removable-cartridge drive, Jun 101
System 7, Jul 194, 269
32-bit addressing fix, Nov 275
aliases, Dec 230
compatibility problems, Dec 225
hiding windows to speed screen redraw, Sep 269
installing DAs, Nov 278
installing extensions and cdevs, Oct 214
switching between System 6 and, Oct 197
System Folders, multiple, Mar 195

T
Table editors, Sep 19
Tactician, Jan 17
Talking Moose, Dec 152
TalkManage, Jul 18
Tape drives, Nov 176
MacBack 8000, Mar 171
Taste, Sep 160
Tax preparation programs, Mar 152
MacInTax, Apr 209
TaxSmith, Mar 152
TCP/Connect II, Jan 207
Technical Introduction to the Macintosh Family, Jul 264
Technical support, Sep 95
Technology Works Mac II/10T Ethernet Kit, Apr 130
Tecmar QT-Mac40 and QT-Mac80 tape drives, Nov 176
Telecommunications. See Communications
TelePort/Fax 9600 fax modem, Aug 114
continues

In Tinsel Town, we're the printers to the stars.



Oscar statuette © AMPAS. ®

When C. David Piña created the graphics for the 63rd Annual Academy Awards, he cast his NewGen™ printer to play a vital supporting role.

Why NewGen? "We print a lot of grey scale, line and type images. NewGen delivers — beautifully. What I see on the screen is precisely what I get. And it's fast too; we don't wait for documents anymore."

Resolution close up,
13 point Courier enlarged 500%.



Standard 300 dpi Turbo PS/840e

With features like Image Enhancement Technology (IET)™, NewGen delivers some of the smoothest lines, characters and curves since Casa-blanca. Plus, Automatic Recognition Technology (ART)™ which actually selects the right interfaces and emulations for you. "And it's got Program Updating, so my printer stays virtually obsolescence-free. And that's important in this business."

As for NewGen technical support, Piña put it this way, "We've never had problems, only a few questions, and they were there — instantly."

The NewGen line offers a complete cast of PostScript®-compatible printers to fill any role. With resolution from 300 to 1200 dpi plus IET. A range of speeds from 4 to 12 pages per minute. Even paper sizes of up to 11"x 17" for simply unequaled graphics and pre-press capability.

All at prices that will make you a star with accounting.

Piña summed up his choice eloquently. "The NewGen was the only printer that offered everything I needed — with features I couldn't get from anyone else."

To learn more, or for your nearest NewGen Dealer, call 1-800-756-0556. We'll be happy to show you just how well our high-resolution printers can play a leading role in your business.

See us at Macworld Expo Booth # 443



© 1991, NewGen Systems Corporation. NewGen, NewGen Systems Corporation, NewGen logo, Image Enhancement Technology (IET) and Auto Recognition Technology (ART) are trademarks of NewGen Systems Corporation. PostScript is a registered trademark of Adobe Systems, Inc. Academy Awards®, Oscar®, and the Oscar statuette are the registered trademarks and service marks of the Academy of Motion Picture Arts and Sciences are used with their permission.



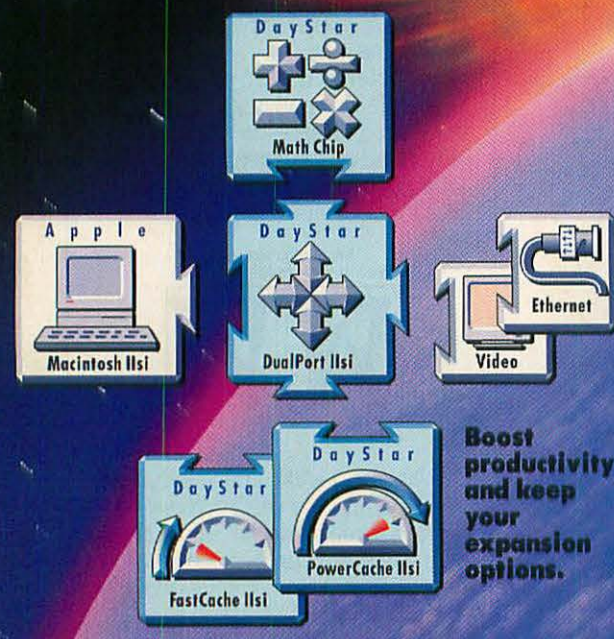
The Hi-Res People™

NewGen Systems Corporation
17580 Newhope Street, Fountain Valley, CA 92708

Toll Free 1-800-756-0556

Dealer Inquires Welcome

Mac IIsi users... DayStar expands your horizons.



Now, get the powerhouse you need for design, publishing or spreadsheets. We deliver versatility and real gains in daily productivity.

DualPort™ IIsi. The best way to get a PDS slot or a math chip. It allows you to use both a PDS card and one of our cache cards in the same Mac IIsi. So if you're planning video or Ethernet, start with the versatile DualPort.

FastCache™ IIsi. Get a 30% boost in all applications. This is the same 64 K cache card we use in the powerful Mac IIsi. Includes the DualPort IIsi.

Universal PowerCache™. Accelerate everything to the highest levels of productivity. This is the card that MacWEEK magazine calls, "a powerful enhancement for the Mac... We highly recommend this product." Guaranteed 100% compatible!



So go ahead, expand your horizons... you can't go wrong with DayStar Digital.

Come join us. 1-800-962-2077

Available through your favorite dealer

DAYSTAR
DIGITAL

5556 Atlanta Highway, Flowery Branch, GA 30542
International: (404) 967-2077, Fax: (404) 967-3018

This ad was completed with DayStar upgrades installed.
©1992 DayStar Digital, Inc.

Circle 201 on reader service card.



SEE US AT MACWORLD EXPO
BOOTH #542

MACWORLD INDEX

Teleport/Lap fax modem, Dec 115
Temperament, Oct 197
Tempo II Plus, Apr 138
Teremoto, Apr 124
Terrorist Group Profiles, Dec 152
Tesserae, Nov 248
Third Wave 45R and 45DR removable-cartridge drives, May 124
Third Wave 150T and 600T tape drives, Nov 176
Third Wave X hard drive, Mar 136, Sep 184
ThoughtPattern, Jan 18, Jun 182
Thunder/8 and Thunder/24 graphics/accelerator boards, Oct 19
ThunderScan Plus scanner, Oct 146
Tidalwave 650 erasable optical drive, Jun 138
Timbuktu, Feb 152, Jun 23, 105
Timbuktu/Remote, Feb 152
Timbuktu/Remote Access Pack, Feb 204
TimeLogger, Jan 77
TI microLaser XL P535 printer, Dec 156
TokaMac LC 68040 accelerator board, Apr 17
TokaMac LC, SX, and CI accelerator boards, Dec 167
TopDown, Oct 186
Toshiba America TXM-3300A CD ROM drive, Jul 17
Total Peripherals Hard Disk, Sep 184
Total Peripherals TP44-R removable-cartridge drive, May 124
Total Peripherals X hard drive, Mar 136
Totem IV and Totem IIID removable-cartridge drives, May 124
TouchBase, Sep 233
Touchstone, Dec 115
TrackMate, Feb 240
Traffic Controller, Jul 17
TrafficWatch II, Feb 152
Training, Dec 199
Baobab Individual Learning Courses, Aug 171
Microsoft Excel Tutorial, Apr 124
TrakHur, Jan 215
Trapping, May 159, Aug 31, Sep 55
TravelModem fax modem, Aug 114
Trax, Jun 146
Trick or Treat, Jul 250
TrueType, Sep 194
Truevision NTSC VIDI/O Box, Feb 178
Tsunami 80-Q hard drive, Apr 171
Tsunami hard drive, Mar 136, Sep 184
TurboPS/480 printer, Dec 156
TurboStar, Feb 152

TurboTax, Mar 152
Tutorland, Dec 199
TV Board and TV Box, Feb 178
TV Producer-Pro and TV Producer-RGB, Feb 178
Tycho, Sep 19
TypeChart, Apr 124, Jul 249
TypeStyler, Aug 122
Typist handheld OCR, Feb 231, Jun 154, Nov 171
U
UltraDrive 50R removable-cartridge drive, May 124
UltraDrive hard drives, Mar 136, Sep 184
UltraDrive S hard drive, Sep 184
UltraKey, Jul 40
UltraPaint, Apr 144
UltraSecure, Jun 122
Umax Technologies UC300 Color Scanner, Jan 99, Jun 130
Umax Technologies UG80 Grayscale scanner, Oct 146
Univation Q50 removable-cartridge drive, May 124
UNIX, TCP/Connect II, Jan 207
Upfront, Mar 109
Upgrades, Apr 197, Jul 176, Aug 189
Macintosh Classic, Jan 17, Feb 119
Macintosh SE, Jan 18
Microtech io-1, Feb 119 replacing SIMMs, Oct 212
User groups, finding, Feb 40, May 214
U.S. History on CD-ROM, Sep 255
Utilities, Mar 130
AppDisk, Oct 197
backup, Jul 228
Cataloger, Feb 240
Compact Pro, Oct 197
DiskExpress II, Jul 18
Disk First Aid, Feb 263
DiskFit, Mar 130, Jul 228
DiskFit Pro, Nov 18, Dec 17
DynoPage, Sep 230
FolderJump, May 196
font, May 152
Font/DA Mover, Nov 278
Image Grabber, Jul 246
InTouch, May 183
JClock, Oct 212
KiwiFinder Extender, Feb 239
Last Resort, Sep 235
macros, Jan 178, Mar 130, Apr 138, Jul 39, Nov 159
MacSleuth, Feb 239
MacTools Deluxe, Jan 210, Jun 122, Aug 189
MasterJuggler, Feb 226, Mar 130, Apr 191, May 152, Jul 263
MaxAppleZoom, Jan 77, Feb 263, Oct 197

MediaTracks, Jan 198, Nov 194
MockPackage Plus Utilities, Jul 264
Mode32, Nov 18, 275
MountEm, Aug 189
network management, Feb 159
Norton Utilities for the Macintosh, The, Feb 213, Mar 130, Jun 209, Aug 189
Now Utilities, Jul 239
Pixel-Flipper, Oct 197
QuickKeys, Apr 138, Nov 159
QuickKeys?, Jan 178
QuitFinder FKey, Oct 197
RamDisk+, Oct 197
ResEdit, Jun 203, 209
resource editors, Jun 203, 209
SCSI Info, Oct 198
SCSI Probe, Mar 197, Aug 189, Oct 197
SCSI Tools, Mar 197, Aug 189
shareware, Jan 77, Oct 197
Software FPU, Sep 274
Stuffit, Jan 235
Stuffit Deluxe, Jun 122, Jul 222
Suitcase II, Feb 226, Mar 130, May 152, Jul 163, Nov 278
SUM II, Jun 122, Aug 189
SuperDisk, Apr 18
Switch Boot, Oct 197
Temperament, Oct 197
UTPMac Ethernet connector, Apr 130
V
Varityper VT600W printer, Dec 156
Veloce hard drive, Mar 136
Ventura Publisher, Jun 170
Verse Search, Dec 186
Versionary, Feb 18
VidClip VideoTape Control Toolkit, Feb 178
Video, Feb 23, 178. See also QuickTime
ColorSnap 32+ video capture board, Oct 164
Commotion Technology, Jul 153
DVA-4000/Macintosh, Sep 206
MediaMaker, Aug 154, Nov 194
MediaNode, May 113
Mediator video-conversion box, Sep 206
MegaGraphics multifunction display adapter board, Feb 127
MPEG compression, Jun 18
MultiMedia Toolkit, Jan 101
multimedia tools, Jan 101, Nov 194
NEC PC-VCR, Jan 101, Feb 178, Oct 154
ProNode device controller, May 113
continues

Ocean View with Room

OCEAN VISTA 130 – what a view! And with plenty of room for expansion, as well. Take a look and you'll see, the VISTA 130 is something truly new and very different. From its rewritable optical storage technology to its contemporary, sculpted styling – the VISTA 130 is the ultimate mass storage choice for Macintosh and IBM computers.

This new-generation drive, utilizing proven magneto-optical technology, is small, fast, and uses a removable 3.5-inch cartridge with a large 128MB capacity. The VISTA 130 offers:

- ▼ the convenience and security of removable cartridges
- ▼ infinite expandability
- ▼ ruggedness
- ▼ long media life
- ▼ extremely high reliability and data integrity
- ▼ the speed of a fixed hard drive
- ▼ and the economy of floppies.

Take a close look. It's the perfect storage solution!



OCEAN

*A new wave of storage solutions for Macintosh and IBM computers.
For more information, give us a call.*

OCEAN Microsystems, Inc.

246 East Hacienda Avenue ▼ Campbell ▼ California 95008 ▼ 800.2OCEAN1 ▼ 408.374.8300 ▼ fax 408.374.8309

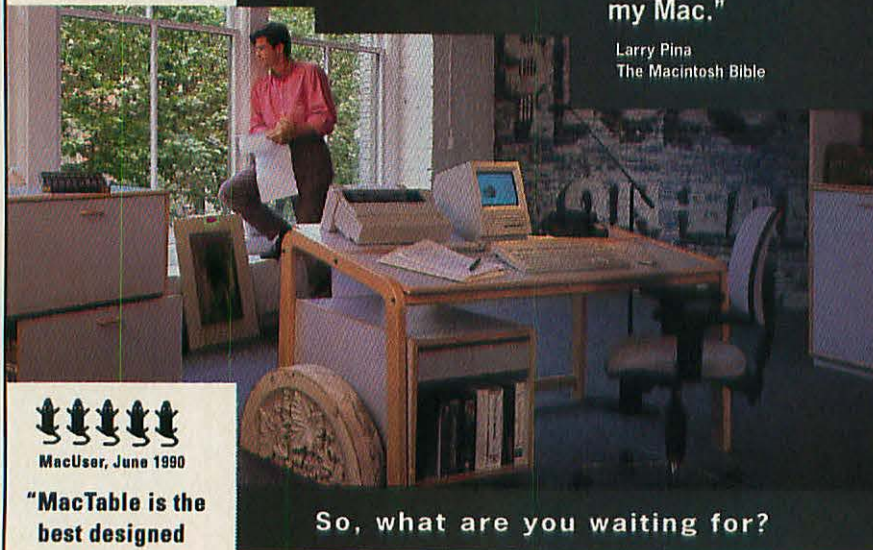
© 1990 OCEAN Microsystems, Inc.
Vista and OCEAN names and logos are trademarks of OCEAN Microsystems, Inc. Other product names are trademarks of their respective owners.

Circle 131 on reader service card

MacTable

"The only
workcenter I'd
ever consider for
my Mac."

Larry Pina
The Macintosh Bible



MacUser, June 1990

"MacTable is the
best designed
and built and
the best value.
You win on all
counts."

Steven Bobker
MacUser



P.O. Box 3217
Redmond WA 98073-3217

Call for Free Catalogue &
Computer Ergonomic Checklist
800-722-6263
206-481-5434 in WA

MacTable design is patent pending. MacTable is a registered trademark of Scandinavian Computer Furniture, Inc.

Circle 252 on reader service card.

The Best Data Analysis Software is from Abacus Concepts

STATVIEW — DATA ANALYSIS & PRESENTATION GRAPHING

Winner of four Macworld World Class Awards for Best Statistics Software, StatView® is the most popular statistics package for the Macintosh. StatView is the *only* Macintosh program which combines a wide range of statistical tests with all the graphing and plotting tools you need to publish or present your results. (Ask us about our new student version.)

SUPERANOVA — ANOVA MADE EASY

If you perform ANOVA, ANCOVA, MANOVA, MANCOVA, repeated measures, or regression on your data, you should be using SuperANOVA™. Winner of the 1989 MacUser Editors' Choice Award for Best New Data Analysis Program, SuperANOVA is the *only* Macintosh program that offers complete ANOVA capabilities as well as built-in presentation graphing and a remarkably user-friendly interface.

MACSPIN — EXPLORATORY DATA ANALYSIS & VISUALIZATION

MacSpin™ lets you plot your data in three dimensions, rotate it, and view it from any angle. There's no better way to explore the patterns and relationships in your data visually. MacSpin is the winner of the 1988 MacUser Editors' Choice Award for Best New Scientific/Engineering Program.

For more information, call Abacus
Concepts at 1-800-666-STAT ext. 805.

ABACUS
CONCEPTS

© 1991 Abacus Concepts, Inc., 1984 Bonita Ave., Berkeley, CA 94704-1038 (510) 540-1949, (510) 540-0260 fax

Circle 50 on reader service card.

See us at
MacWorld Expo!
Booth #2448 Moscone

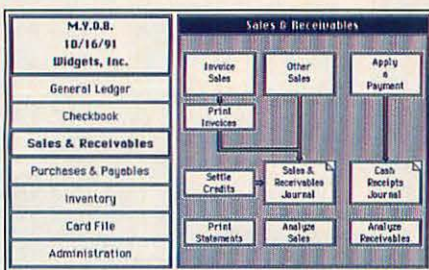
- QuickImage 24 video capture board, Oct 164
QuickView Studio, May 107
Radius Video Collage Engine, Jan 99
RasterOps 245TV board, May 111
Touchstone, Dec 115
VideoAuthor, Nov 194
VideoDiscWriter, Nov 194
Video Explorer, Feb 178
Video Master, Feb 178
Video NTSC Encoder, Feb 178
Video Publisher, May 113
VideoQuill, Jun 186
Video Toaster, May 107
VideoAuthor, Nov 194
VideoDesk 1/24, Feb 178
VideoDiscWriter, Nov 194
Video Explorer, Feb 178
Video/FX, Feb 178
Video Image 1000, 1200, 1500, and 2000, Feb 178
VideoLogic DVA-4000/Macintosh video board, Feb 178
Video Master, Feb 178
Video NTSC Encoder, Feb 178
VideoPaint, Apr 144
Video Publisher, May 113
VideoQuill, Jun 186
Video Toaster, May 107
Viking 3/72 GS monitor, May 132
Viking 3/72 M and 3/2400 monitors, May 132
Virex, Mar 130, Apr 18
Virtual memory, May 214, Jul 176, Nov 275
Virtual reality, Nov 61
Mandala, Feb 127
Virus Detective, Jan 77
Viruses/virus detectors, Jan 77, Feb 119, Mar 105, 130, Apr 103, May 113, Jun 109, Jul 165, Aug 89, Sep 139, Oct 99, Dec 115
Rival, Feb 211
SAM, Feb 211
Virex, Apr 18
WDEF, Apr 192
Visionary, May 17, Jul 17
Vista 600 hard drive, Jul 184
Vista hard drive, Mar 136, Sep 184
Voice Impact and Voice Impact Pro sound recorders, Oct 103
Voice Record, Nov 276
Voyager 030 accelerator board, Jul 210
Voyager VideoStack, The, Feb 178
V-Series Ultra Smartmodem 14400, Oct 20
- Wagon Train, Oct 176
Wall Street Investor, Mar 152
Wall Street Watcher, Mar 152
Watch, Feb 152
WatchTower, Aug 89
WealthBuilder, Mar 152, Apr 165
What-If Solver Premium Edition, Sep 20
Where in Time Is Carmen Sandiego?, Jan 200
Winer, Dave, Aug 51
Wingz, time-and-date stamping spreadsheet, Jul 266
Wip hard drive, Mar 136, Sep 184
Women Artists of Color videodisc, Apr 124, May 113
Word. See Microsoft Word
Word Count DA, Feb 240
WordMaker, Sep 160
WordPerfect, Jul 220, Sep 160
Insights, Jul 281
WordPerfect Office, Dec 170
Word processors, Sep 160. See also Microsoft Word
fixing irregular line spacing, Sep 270
FullWrite Professional, Sep 160
MacWrite II, Sep 160
Nisus, Feb 215, May 36, Sep 160
Taste, Sep 160
Word Count DA, Feb 240
WordMaker, Sep 160
WordPerfect, Jul 220, 281, Sep 160
WriteNow, Sep 160
Working Software, Jul 69
World Class Awards, Aug 104
WORM drives, Jun 138
WPduet, Feb 224
WriteNow, Sep 160
Writer's aids, Aug 138
Editorial Advisor, May 188
quotation collections, Jun 189
Report Ideas, Jan 218
WTI-Moonraker, Feb 178
WysiWord, Nov 163
- X
Xerox Imaging Systems GS Plus scanner, Oct 146
XPress. See QuarkXPress
Xyxis Corporation
XY600RW erasable optical drive, Jun 138
- Y
Your Personal Trainer for the SAT, Apr 177
- Z
Z-3 scanner, Oct 146
Zoom MX9600S fax modem, Aug 114
Zterm, Jan 77

MYOB.

...helping you Mind Your Own Business

Fully-functional
Demo Disk: \$5⁰⁰! LIMITED
OFFER

Incredible Accounting Software...\$5!



"M.Y.O.B. really takes advantage of the Macintosh interface...Command buttons...are arranged in a flow chart. As a result, you don't need to be an accountant to know the order in which the command should be used."

MacWorld, November, 1991

Only M.Y.O.B. Has:

Easy Interface. Unique graphic windows display every function in clear on-screen flow charts. No need to learn obscure commands — just point and click.

Simple Screens. Invoices look like real invoices. Checks look like real checks. There's nothing new to learn.

Customizable Forms. Design your own invoices, statements, purchase orders, checks and mailing labels. M.Y.O.B. includes an integrated drawing program that lets you add text, draw lines and boxes, move and resize fields, and paste graphics.

Analysis Windows.

- **Sales** Analyze by item, customer or employee. Track sales, costs, profits.
- **A/R & A/P** Ages 30/60/90 day. Just click to go from customer/vendor summary to original invoice or purchase order.
- **Inventory** Interactive "order book" shows what's on hand, what's due from suppliers and what's back-ordered.
- **Balance Sheet** Analyze this year, last year, this year vs. last year, or vs. budget.
- **Profit & Loss** Analyze for any period (including YTD) in this year, last year, this year vs. last year, or vs. budget.
- **Cash Flow** Projects your checkbook balance into the future.

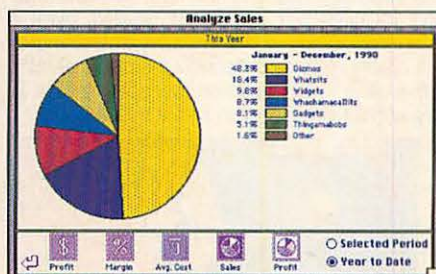
Satisfaction Guaranteed

We're confident that M.Y.O.B. is the best accounting program available for your business. If for some reason you do not agree, return it within 30 days for a full refund.

TELEWARE

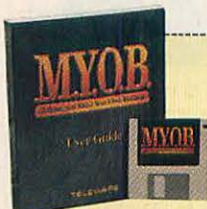
System Requirements: Mac Plus with at least 1 megabyte of memory; System 6.0 or later; hard drive with 2 megabytes of free space.

Circle 76 on reader service card



"It's like having a full-time accounting manager watching over your shoulder."

Ken Landis, Reviewer



Send me a
Fully-functional
M.Y.O.B.
Macintosh
Demo Disk for only \$5⁰⁰!!!

Name _____
Company Name _____
Address _____
City _____
State _____ Zip _____
Daytime Phone () _____
Preferred payment method (check one)
☐ Check or money order enclosed ☐ Visa ☐ MasterCard
Card No. _____
Exp. Date _____
Signature _____

Mail to: TELEWARE
PO Box 346 • Rockaway, NJ 07866

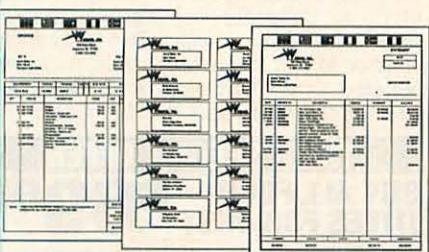
or Call Toll-Free

1-800-237-8400

Ext. 586

24 Hours a Day — 7 Days a Week, USA & Canada only.

AD CODE MW0292



"The forms customization feature is highly flexible and lets you change the look and content of printed checks, invoices, statements, purchase orders and mailing labels to give them a unique look and feel."

Mel Male, Reviewer

Invoice Sales

Customer: ☐ Item Invoice ☐ Service Invoice ☐ Handwritten

Customer: ☐ Sales, Acme Sales, Inc.
Ship to: Acme Sales, Inc.
Main Street
Township, USA 07309

Invoice #: 000012
Date: 12/22/91
Cust. No.: 12340
Terms: 2/10 Net 30

Quantity	Item #	Description	Price	Unit	Disc%	Total	Job #
12	100-101.05	Widgets	\$17.00	each	5%	\$193.80	
4	400-101	Whatchas	\$67.00	each	5%	\$127.30	
4	400-103.08	Whatchamacalits	\$103.00	each	5%	\$390.00	

Sub Total: \$711.10
Sales Tax: \$25.06
Total Amount: \$736.16
Paid Today: \$0.00
Balance Due: \$736.16

Print: Cancel Place in Pending File Record as an Actual Sale

"Only a few programs make good use of the Macintosh interface. Teleware's M.Y.O.B. has one of the best interfaces."

MacWorld, October, 1991

TIGER SOFTWARE

YOUR SOURCE FOR QUALITY MACINTOSH SOFTWARE AND PERIPHERALS

Call 1-800-666-2562, Mon.-Fri. 8AM-10PM, Sat. 8:30 AM-8:00PM & Sun. 11AM-5PM (EST). Or, use our 24-hour fax line: (305) 444-5010. Federal Express shipping just \$3.00. A "7" symbol in the price box designates System 7 compatibility. Call for complete compatibility details.

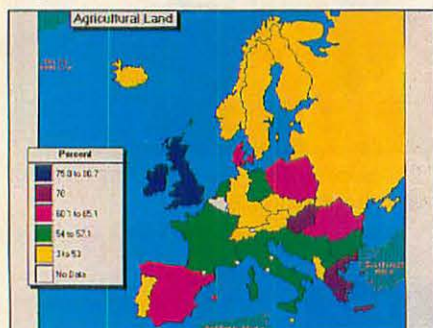
© 1992 TigerSoftware, 800 Douglas Entrance, Suite 765, Coral Gables, Florida 33134

World Fact Book, Almanac & Atlas in One.

TigerSoftware brings you another new way to use your Mac. This product, a brand new release, puts a library of valuable information at your fingertips.

The Software Toolworks World Atlas for Macintosh is the perfect single-source reference guide for travelers, educators, business people and students of all ages. This indispensable tool brings together important information that would take months to research on your own: government, inflation rates, climate, economy and more!

Only World Atlas gives you instant access to the most accurate maps available on a personal computer. Includes over 250 highly detailed, black & white or color maps of the world, regions, countries, even oceans. A huge database of international information offers valuable data on over 250 topics in 10 categories for virtually every nation in the world!



Reports can be customized to include maps and text from World Atlas. Great for professional presentations, and made easy with point and click or keyboard commands.

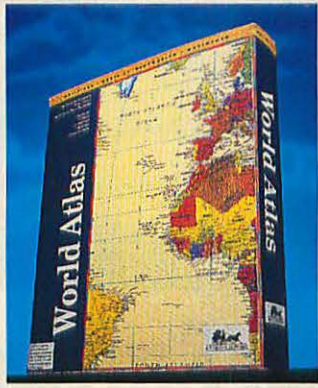
Learn to navigate World Atlas in a flash! Drop down menus allow easy access to all options. Index maps let you move from map to map with a single click. And the index feature gives you virtually instant access to any map in the program.

Discover the world without leaving your chair! World Atlas can help you find everything from Crime in Costa Rica and Inflation in Ireland to Mining in Malaysia and Television in Tunisia...

A Sample of Information in World Atlas...

Geography — 12 topics including: Total Area, Comparative Area, Land Boundaries, Coastline, Terrain, and Land Use.

People — 28 topics including: Population, Nationality, Religions, Ethnic Divisions and Language.



Education — 11 topics including: Literacy, Educational Expenditures, Newspapers and Libraries.

Health — 21 topics including: Access to Health Care, Calorie Consumption and Mortality Rate.

Crime — 10 topics including: Murder, Theft, Serious Assault and Drug Offenses.

Government — 22 topics including: Official Name, Capital, Administrative Divisions and Government Leaders.

Economy — 55 topics including: GDP/GNP, Exchange Rates and Natural Resources.

Agriculture — 62 topics including: Work Force, Animals, Animal Products and Land Allocation.

Communication — 20 topics including: Highways, Airfields, Telecommunications and Television.

Travel — 10 topics including: Required Documents, Commerce, Local Time, Tourism.

Quick, Easy and Fun to Use! There are no commands to learn; just point to a country on any index map, click, and the desired map appears — instantly! You can even print customized reports of maps and data. Plus, both map and text fields can be exported for use in desktop publishing.

Mavis Beacon Teaches Typing... Quickly, easily, perfectly, and it's fun! You have the world's finest typing instructor at your side every time you practice. When you make mistakes, Mavis Beacon explains things to you in conversational sentences, not just beeps and bells.

We learn fast when it's interesting and Mavis makes your learning interesting and fun. When she creates your customized practice exercises, Mavis selects quotes from history's greatest writings, countless riddles, rhymes and jokes (for all age groups), and hundreds of fascinating facts from the *Guinness Book of World Records*.

On-Screen Menu-Driven Easy-to-Use-Features:

- Stunning, fully-detailed 2D and 3D Graphics.
- Lifelike keyboard and learning aids.
- "Guide-Hands" type with you to show perfect technique.
- Help windows available for every stage of every lesson.
- "Road-Racer" arcade-quality typing game.
- Musical "Tempo-Typing" with on-screen metronome.
- Over 20 colorful graphs display your progress.
- Speed, Accuracy, and Completion meters on-screen.
- Word-Processor or "Typewriter" mode.
- Complete typing textbook included.

AccuWeather — Your Own Personal Weather Center. With AccuWeather, your Mac becomes a personal meteorological information service, providing data for the nation and the world. Using your modem, you'll access the same information that radio and television stations use to prepare their broadcasts. The screens you'll see are used by weather professionals who depend on precise, up-to-the-minute information that only AccuWeather can give. And now you can have a direct line to this same information. The color-enhanced maps display current precipitation, temperatures, moving fronts, cloud cover, lightning, complete hurricane tracking sequences, jet stream movement, freezing levels, even soil temperatures and surf conditions.



Dollars + Sense. The hottest financial package for the Mac. Eliminates legwork, improves productivity and handles all the details. Generate checks, record income and expenses automatically, balance your checkbook and create your choice of great looking pro-quality financial reports and statements. Fast and easy to use, Dollars and Sense is great for home and small business finances, with built-in tax formatting or export to your favorite tax program. An industry best-seller since 1984, Dollars and Sense is the refined and enhanced financial tool for the Mac.

TIGER SPECIAL OFFER
BUY ALL FOUR TITLES FOR JUST \$89.95

Or purchase titles individually from just \$29.95 each.

SOFTWARE TOOLWORKS

BAK2225 World Atlas Macintosh	\$34.95
BAK2508 Mavis Beacon	\$29.95
BAK2506 AccuWeather	\$29.95
BAK2507 Dollars + Sense	\$29.95
<small>World Atlas: Macintosh Plus, SE, SE/30, Classic, LC or II series. Requires System 6.02 or higher; 7 MB hard disk, B&W or color. Call for other system requirements.</small>	

HOW TO PLACE AN ORDER

- ▶ **Ordering:** Just call 1-800-666-2562 Monday-Friday 8AM-10PM, Saturday 8:30AM-8PM and Sunday 11AM-5PM (eastern) and one of our representatives will be happy to take your order. Or, simply complete the order form and return it to us — your order will be promptly processed.
- ▶ **Fax Orders:** For faster service, FAX your order form or P.O. to us on our TigerSoftware ExpressFAX Order Line — (305) 444-5010.
- ▶ **How to Pay:** Pay for your purchases with VISA, MasterCard, American Express, Discover Card, by check (personal checks held 10 days) or money order. We DO NOT charge your account UNTIL WE SHIP THE SOFTWARE! We accept purchase



orders from Fortune 500 companies, educational, and government institutions (net 15 days).

- ▶ **Risk-Free Return Guarantee:** We proudly stand behind every product we sell with our ironclad, 30-day return guarantee. If for any reason, you're not 100% delighted with the product, just return it within 30 days. We only ask that you return ALL material in new, resalable condition (packing materials, registration cards, etc.) and the original invoice. We will then immediately exchange the program or issue a TigerSoftware credit, less shipping costs, for any future TigerSoftware purchase.
- ▶ **Customer Service:** If you order your new software product by 3:00 p.m. e.s.t., then Federal Express picks it up the

same day for immediate shipment to you. If for any reason you are unhappy with your new software, simply call our Customer Service Department for a Return Authorization Number, and return it to us freight prepaid. We will gladly exchange it for any other product in our huge inventory.

LOWEST PRICES GUARANTEED!

ALL PRICES ARE SUBJECT TO CHANGE.

TigerSoftware is a registered trademark of TigerSoftware, Inc. This entire catalog, copy and unique method of showcasing products is copyright 1989, 1990, 1991 TigerSoftware, Inc. All trademarks appearing herein are acknowledged.

THE MAC PROS

ORDER IT TODAY — PUT IT TO WORK TOMORROW MORNING!

Speak to fully trained Macintosh Professionals — Over 100 Years Combined Experience!

Over 11,000 products available! If it's not here, call us — we'll get it and ship it!

DON'T PAY ANYONE ELSE'S LISTED PRICE! CALL US AND WE'LL BEAT IT!

The One Stop CD-ROM!

The Complete, Interactive CD-ROM Package!

This one box is your ticket to the incredible world of CD-ROM. Everything you need to get started is inside — including seven of the hottest CD-ROM software titles in the industry. Your Koss SA/30 amplified stereo speakers pump out the sound as you explore full-interactive, multimedia computing. A complete package, perfect for home and business.

Hundreds of thousands of diskettes' worth of information, fun and productivity are packed onto just speedy CD-ROMs! They include the amazing, full-length encyclopedia, complete with enhanced sound; a comprehensive world atlas, presented in full-color; the entertaining Cosmic Osmo; complete coverage of Operation Desert Storm with photos, sound and more; Ludwig Van Beethoven Symphony No. 9; the classic fairy tale, Cinderella in English and Danish; and The Time Table of History. Without a doubt, it's the perfect introduction to CD-ROM, with everything included, nothing else to buy.

Desert Storm: The War in the Persian Gulf chronicles the war and the events that precipitated it, providing news reports, eyewitness accounts, photos, sound recordings, detailed maps and interviews.

The New Grolier Electronic Encyclopedia covers hundreds of topics in great detail. Many entries contain enhanced sound and vibrant color. It is the premier CD-ROM encyclopedia. 33,000 articles, 1,500

color graphics, numerous maps and stereo sound make learning exciting.

Switch to Ludwig Van Beethoven Symphony No. 9 and explore the entire work, as well as its historical setting... all while listening to the music itself.

Bring the classic fairy tale, Cinderella, to life on your Mac. This interactive program uses music and sound to enhance reading development and language skills.

Or, slip in the Time Table of History: Science and Innovations. More than 6,000 interrelated entries show the chronology of historical, scientific and technological events from the beginning of time to the present day.

From there, explore the earth's geography with The Toolworks World Atlas. This package contains the most extensive collection of full-color maps you'll find anywhere. There's also plenty of data about each country and region: population, industry and more.

For a little fun, try Cosmic Osmo — winner of the 1990 MacUser award for "Best Recreational Program." This fascinating adventure

game follows Cosmic Osmo to the Worlds Beyond the Mackerel.

Amplified, Stereo Speakers! With the Koss SA/30 amplified stereo speakers, you'll actually hear the sounds of the world when you slip in a CD.

ORDER TODAY! Offer expires March 1, 1992



You Get All This: CDR-36 or 72, interface, 7 CDs and Stereo Speakers.

How The Readers Compare...

Complete CD-ROM Gallery	Response Time	List Price	Tiger Price
CDR-72 w/Clip Art 3-D	350 ms	\$1298	\$599
CDR-36 w/Clip Art 3-D	500 ms	\$1148	\$599

Thunderous Digital Color!

The NEC MultiSync 3FGx. The designers and engineers went crazy on this one, packing unparalleled features and performance into this amazing new monitor. Like the new NEC FullScan capabilities, allowing you to see up to 36% more active screen display — without any distortion. Its 15" screen is flat — perfectly flat — and provides the highest refresh rate among its so-called competitors. Crisper images, brighter colors, richer tones and more contrast.

But the MultiSync 3FGx isn't just another pretty face — it's got a great body, too. The NEC ErgoDesign specialists have trimmed the MultiSync 3FGx with a variety of enhancements in comfort and safety. The anti-static screen eliminates dust attraction and static shock. The up-front user controls are solid, and easier to reach and use, the tilt/swivel base offers unlimited adjustment for more comfortable viewing. And (the revolution continues...) the 3FGx features NEC's Reduced Magnetic Field technology which meets stringent Swedish PRN standards for lower ELF and VLF emissions.

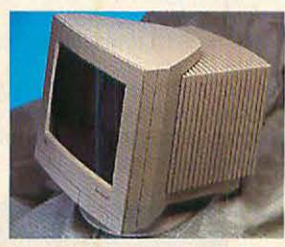
The NEC MultiSync 4FG. The 4FG revolutionizes monitors in one very impor-

tant area: color accuracy. This new standard in video excellence is based on the concept of multiple-frequency engineering. And only NEC can do it. The award-winning 4FG is a 15" flat-screen, digitally controlled monitor that features AccuColor. This revolution allows you to adjust colors to your preferences, or to match your printer's capabilities — even match Pantone and Trumatch colors! Like the 3FGx, the 4FG provides crisp images — 36% larger! The Invar Shadow Mask (it's very technical) provides displays that are 20% brighter.

Another innovation: The MultiSync 4FG monitor's micro-processor-based memory and digital controls provide automatic sizing and centering of screen images for preset and custom graphics modes. Perfect for Windows and desktop publishing.

The Boss — The NEC MultiSync 5D. The MultiSync 5D has a long list of speci-

fications, capabilities and features. It has a slew of technical innovations that set it apart from any other color display in the world. But to see what it's really all about, just look at it. An explosion of color! Blistering speed! Crisp reproduction with NO blurring and NO distortion. The 5D is the culmination of every NEC breakthrough — except bigger! A massive 20" screen, compatible with everything from VGA to incredible 1280 by 1024 graphics, DOS and Macintosh. Perfect for Windows, high-end graphics, CAD/CAM and sophisticated desktop publishing applications. The etch screen technology delivers maximum contrast, minimum glare and the Dynamic Beam Focus allows for the sharpest corners you've ever seen in a display — edge to edge.



EVERYTHING'S INCLUDED:

Macintosh Connector Cables and the acclaimed AccuColor Software with every NEC monitor.

NEC MONITORS

BAK8513 NEC MultiSync 3FGx 15"	\$660.00
BAK8514 NEC MultiSync 4FG 15"	\$780.00
BAK8515 NEC MultiSync 5D 20"	\$2295.00

Sorry, no returns on these items. Shipping charges billed actual cost.

Information & Orders: 1-800-666-2562 Int'l Orders: 305-443-8212 Fax: 305-444-5010



SAME PRICE AS GROUND

The Art Of The SCAN

REVIEWER'S NOTEBOOK: *The Logitech series of advanced mice and scanners has won acclaim from the press — and thousands of loyal users. No other manufacturer engineers so much precision and innovation into their products. From an incredibly sharp hand scanner, to the all new breed of "programmable" mice, they're a pleasure to work with. We put the ScanMan 32 hand scanner through it's paces, performing over 50 scans of various black and white images — photos, line art, logos, type, illustrations — even poor-quality photos. The ScanMan 32 features 32 gray scale performance, with adjustable scanning resolutions from 100 dpi for quick scans; up to 400 dpi for magnificent finished images. Use scanned images in word processors, multi-media, desktop publishing, HyperCard, OCR and more. Hold a Logitech device in your hand and you'll notice the superior craftsmanship, the precise movement of the rollers and the extra large scanning window so you can see as you scan. Scan instead of re-keying data: capture text (with OCR software) with crisp, clean results.*

The Science of Scanning. Logitech technology destroys the old barriers of scanning, increasing the speed and accuracy of anything you scan. Superior image quality, with the ability to produce halftones for reproduction. The set of output controls provide the best possible results on any printer or monitor screen. Its 4" wide scanning area allows full-page scans with just two quick passes.

And Logitech's rugged construction and precision roller system allows straight, unwavering scans. No curving, no skipping. The scanning speed indicator controls the movement for perfect scans every time. There are three settings for scanning photos and another for scanning line art. Its shape is perfect, its weight and components distributed equally for balance. All of which makes getting an image from paper—into your Mac, simple and easy.

The ScanMan 32 gives you a free set of software editing tools, including a 32 gray scale palette for detailed retouching. There's also a handy dimension box and tear off tool palette; use them alone or incorporate them as a desk accessory. Pop up real-time brightness and contrast controls, refine images with amazing flexibility, rotate, flop and invert images. Save your scans in a variety of formats, including MacPaint, TIFF and PICT).

Here's What You Get: The ScanMan 32 contains everything you need. The Model 32 Gray Scale scanner, SCSI interface box and cable, power supply adaptor, ScanMan software, version 2.0, CatchWord Pro OCR software and complete user guide. Fast, easy, compatible — and powerful — the ScanMan 32 is a superior hand scanner.

FREE with the ScanMan 32 — CATCHWORD PRO: Powerful Optical Character Recognition (OCR) software that allows you to capture printed, hard-copy data by scanning it, rather than typing it. But, without quality software and a high quality scanner (like the ScanMan 32), scanning text won't work properly.

"Dirty" scans produce unwanted characters and commands, requiring enormous cleanup — creating more work than rekeying.

CatchWord Pro delivers an amazing 99% accuracy in OCR testing, used in tandem with the ScanMan 32. CatchWord Pro is compatible with popular word processors, spreadsheets, databases and desktop publishers — so you can scan information directly into your application and use it immediately. Different typesizes and sizes are no problem, printed characters, in any size of typeface are instantly recognized. It will even automatically convert two scans into one, full-page image.

What about larger, memory-intensive photos and pages packed with small type, don't they slow your system to a crawl? The answer is "no" and only Logitech can say that. While other scanners are notorious for system slowdown, all of your ScanMan 32 scans zip along with Logitech's ingenious memory management features that automatically swap image data between your system's RAM and hard disk.

The instrument itself is a masterpiece. From the genius of the respected industrial design firm Frogdesign — also responsible for the new line NEC monitors and other distinctive hardware products, the ScanMan 32 is different from the ground up. First, you'll notice that it's heavier, with precision rollers that provide more "grip" along with a superior guidance system for light-touch control. All of which means you can scan quickly and accurately — once — and capture the image perfectly. While many other hand scanners rely on you to move in a straight line as you scan, the ScanMan 32 provides fully balanced, direct movement.

Using the ScanMan 32, you can create instant layouts, experiment with backgrounds and special effects. Add text and explore sizing and cropping options within seconds. That's why the hand scanner has caught fire in the design world: its ability to let you see many different visual combinations.



Businesses use scanners to capture text described above and for keeping archival records of paper documents with instantaneous access. Logitech's advanced technology gives you more

flexibility, more creative tools and more value than any other scanner.

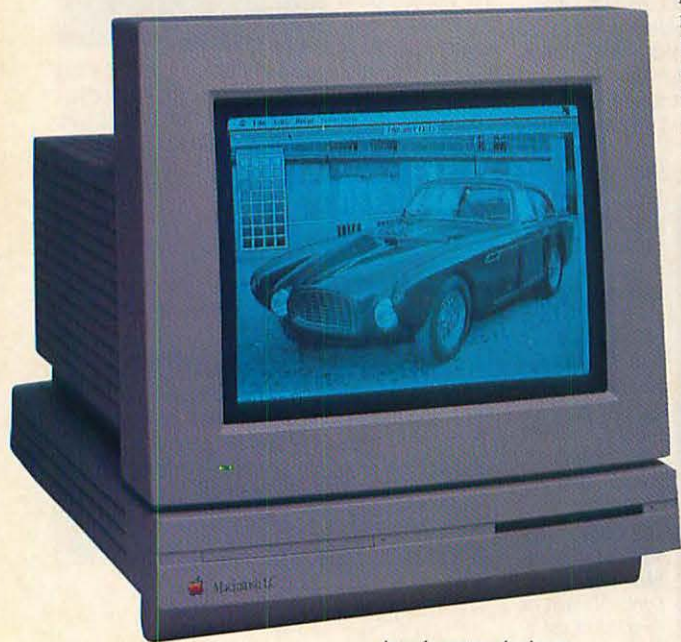
Although there are two basic scanning modes ScanMan, there are in fact three ways of scanning an image: Line art mode, Gray mode, or Mixed mode.

Line Art Mode. Line Art mode is useful for scanning black and white line drawings, diagrams, and text. This mode produces high-contrast images in black and white (no grays).

Gray Mode. Gray mode is useful for scanning photographs, color images, and drawings where the high contrast black or white character of Line Art mode detracts from the quality of the image.

Desktop publishing programs enable you to combine your ScanMan images with text. Most of these programs accept either PICT or TIFF format files. PICT format enables you to work with compact files, although you won't be able to change the display format of the document or the grays. In TIFF format, you can alter the screen angle, dithering options and proportions of the document.

Mixed Mode. The third, and less common method of scanning is Mixed mode. Mixed mode is useful for certain specialized applications, and for experimenting with ScanMan to produce different effects.



Actual unretouched scan.



MORE THAN JUST ONE BUTTON. Logitech is committed to providing extra ease for Mac users. The Macintosh graphic environment takes maximum advantage of the special features offered by Logitech's desktop tools. Although the single-button Macintosh mouse meets many people's needs, three mouse buttons offer the extra functionality that make Macintosh, A/UX and X-Windows systems more convenient to use.

Now, Macintosh users can save desk space without relying on a large, clumsy ball to do it. Logitech's award-winning TrackMan® Stationary Mouse combines the advantages of both mice and trackballs in one unique device.

TRACKMAN® — High Resolution Stationary Mouse. TrackMan puts an input revolution on the Macintosh desktop. This award-winning design takes a trackball from a large center position and makes it smaller and more manageable by putting it under your thumb. It's easier to move around the screen, freeing your fingers to work the three large tactile buttons. Shaped so your hand rests on it easily, TrackMan is more comfortable than any other trackball or stationary mouse.

Stationary and easy to install: perfect for anyone with limited desk space as it requires no additional room to move on the desktop. Just plug it into your Macintosh ADB port and you're ready to go.

3 buttons: the functionality that makes Macintosh, A/UX and X-Windows systems more convenient to use.

Easy programmability: MouseKey™ Control Panel software lets you easily program the mouse buttons for your most used keystrokes or menu shortcuts in each application. You'll save time and get everything done more easily. Once you've pro-

grammed for an application, MouseKey remembers the settings.

- **Perfect precision:** thumb-operated ball provides greatest ease, precision and comfort.
- **High resolution:** adjust the resolution from 150 to 300 dpi to get just the precision you need for every application.



MOUSEMAN™ — High Resolution Ergonomic Mouse. MouseMan is more mouse than you've ever seen before for your Macintosh. Three programmable buttons offer you ultimate flexibility — program them for the tasks you perform most

and watch your productivity rise! MouseMan offers the same high quality and excellent tracking on any surface that have built the reputation of all Logitech mice — constructed with the finest materials.

- **Evolutionary ergonomics:** the next great advance in mouse ergonomics, MouseMan features left- or right-handed versions with angled curves that fit your hand perfectly.

• **Easy programmability:** MouseKey™ Control Panel software lets you easily program the mouse buttons for your most used keystrokes or menu shortcuts in each application. You'll save time and get everything done more easily. Once you've programmed for an application, MouseKey remembers the settings. You can assign a variety of tasks: click functions, view, modify or delete — even program it to draw circles automatically.

- **3 buttons:** make Macintosh, A/UX and X-Windows systems more convenient to use.

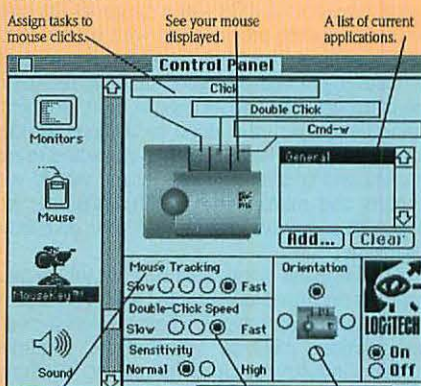
• **High resolution:** adjust the resolution from 200 to 400 dpi to get perfect precision for every application.

• **Exceptional quality:** Logitech mice meet the stringent quality requirements of both the largest systems manufacturers and our desktop customers: tested to 300 miles of life and more than three million button operations.

- **Easy to install:** just plug it into the ADB port on your Macintosh.

Programming Your Logitech Mouse.

The MouseMan Control Panel sets up your mouse buttons to do anything you want them to ... change speed, response time, sensitivity, and more.



Mouse Tracking. Set how fast the pointer moves in response to the speed of your mouse.

Sensitivity. Set the precision and distance with which the pointer travels when you move your mouse.

Orientation. Set pointer moves to match the direction in which you move the mouse.



LOGITECH

BAK2509 ScanMan 32 w/ Catch Word Pro \$379.00
BAK2510 TrackMan MAC Upgrade \$69.00
BAK2511 MouseMan MAC Upgrade \$59.00
ScanMan 32: Macintosh Plus or better running System 6.0 or later. Hard disk recommended. TrackMan/MouseMan: Any ADB Macintosh running Macintosh, A/UX or X-Windows Operating Systems.

TIGERSOFTWARE

Information & Orders: 1-800-666-2562 Int'l Orders: 305-443-8212 Fax: 305-444-5010



SAME PRICE AS GROUND

Everything Begins With A Great Idea...

REVIEWER'S NOTEBOOK: *It is a rare and valuable individual who can consistently come up with great ideas. Whether it's to solve a problem, build an effective business plan, create an advertising campaign or position a product. The fact is, there's no substitute for original thinking. IdeaFisher is a unique software product that actually helps you generate high-potential thoughts. It's not magic; it is designed to help you identify relevant issues, examine new perspectives and analyze existing information. It directs you towards associations between words and questions, and adds analogical reasoning (analogy and metaphor) to unearth new avenues of thought. Use it once, and you'll unlock the potential of your inner creativity, a power that everyone possesses, but only a few ever truly cultivate.*

Idea Fisher is the brainchild of Marsh Fisher, co-founder of Century 21 International Real Estate Company. It is a 7 megabyte computer companion for high-powered brainstorming sessions that help you trigger new ideas. Innovative ideas, from your memory, sparked by dynamic association. It is composed of two distinct databases: QBank and IdeaBank. QBank contains nearly 6,000 questions to clarify, analyze and solidify your thoughts. When you answer questions posed in QBank, IdeaFisher generates key concepts to explore in IdeaBank. IdeaBank contains 61,000 words and phrases, 387 topical categories and 28 major categories. Its cross-referenced system provides you with over 700,000 associative links. These two sets of data link to stimulate convergent and divergent thinking, reminding you of images, facts and feelings. In all, these mental connections open the door to millions of idea-associations. IdeaFisher becomes a pipeline to rich imagery and creative solutions lodged within your memory and subconscious. Again, IdeaFisher isn't magic, it's a crowbar that loosens your own inner originality.

The IdeaBank is the "Idea Base" in which information is organized as your mind would organize it, into clusters of associations. The categories included are: Actions/motions, Agriculture, Animals, Business/industry/occupations/money, Clothing/jewelry/grooming, Colors, Communication/education/the arts, Comparison, Emotions/behavior/personality, Energy/technology, Containers/storage, Foods/cooking/eating, Government/law/politics, ... and dozens more.

IdeaFisher helps you tap your own resources, based on the powerful stimulus of language, association, memory and knowledge. That's the secret here. The more you explore a concept, based on your review of associated words and phrases, the more original thought will be uncovered. In fact, Linus Pauling's research on the subject states that the more ideas you can generate, the more likely you are to produce an excellent one.

Further, research has shown that the most innovative solutions tend to be found among the last 50% of all the answers generated on the topic, while the most obvious, unoriginal ideas tend to appear in the first 50%. That second 50% (containing the excellent idea) is often buried in our subconscious: our memory. That's why techniques of creative thinking cannot overcome one simple obstacle: our inability to remember everything we know. Whereas human beings, fortunately, have a vast capacity for recognizing important information, we have a much lower capacity for recalling it.

But how does IdeaFisher actually work? Let's begin by looking at an analogous example. Try to re-



member your high school graduation class. At one point in your life they were perhaps the most important people you could ever imagine. You knew more about them than any other group. Back then, it seemed as if they would never be forgotten; each one held a special place in your mind. But today, you might be hard pressed to remember even a small fraction of them. Their names, where they lived or what they were like. They've been covered with layers of more recent people, your wife, children, business associates and friends. But if you open your yearbook, the personalities would come rushing back, your mind would send hundreds of bits of information back to the forefront, and restore your memory with great clarity. The names, pictures and autographs would set off a flurry of associations. It would be a powerful "remembering" experience. You would be able to produce stories, facts and images that you haven't considered in years. In contrast, you could try using the phone book instead of the yearbook — with far less dramatic results. Why? Simply because most of the information would not be relevant. IdeaFisher works like the yearbook, providing vast pools of detailed information that generate associations. That's the key.

IdeaFisher embodies a system of memory and association, known as "The New 3 R's." It is a systematic approach to creative thought. These steps are: Recording information (memorization); Retrieving information (recalling and reconstructing); and Recombining information (putting information together in different ways). Together, these steps unleash a storm of new thoughts.

Recording: When you set off to create a new idea to be used in your work, you must accumulate as much information as possible. Most successful people are curious about their subject, and therefore, usually very knowledgeable. Your mind holds a massive amount of information from your ongoing education of your industry and society. That information is stored within your memory. Recording information is the easy part and the more you know, the more material you can use to re-combine later in step 3.

Retrieving information is the most difficult and, frankly, the most unreliable. IdeaFisher's two distinct databases work to jog your memory with hundreds of associative questions and words to allow your recorded information to merge, on demand, with the problem you are trying to solve.

Then, the re-combining process will yield new, fresh and innovative thinking, targeted directly at the subject at hand. IdeaFisher stores a collective memory of the common culture. Re-combining: Ecclesiastes taught us that "There is no new thing under the sun." The educator Rudolph Flesch observes that "... a new idea is the reassociation of existing ideas," — or parts of ideas — to form new combinations.

This step combines (and is dependent on) steps 1 and 2 to be effective. By acting as a warehouse of information (step 1), and by aiding in reminding you of what you already know (step 2), IdeaFisher sets the stage for the act of imagination: creating new combinations (step 3). Moreover, IdeaFisher's Modification Questions help you break through barriers of ordinary thinking and imagine the unimaginable.

Often, two simple concepts can be combined to create a new and larger idea. Like the swimming pool slide. It was brought to market by a traveling salesman who, in his travels, came upon a group of youngsters playing on a playground slide. With an eyeshot, he noticed another group of children splashing in a small wading pool. He instantly reflected on his own childhood, his early life by a lake in Minnesota. Suddenly the idea was formed: construct a slide designed specifically for a pool. That man made many millions of dollars from the strength of a single idea: relating two seemingly unrelated things into one new idea.

IdeaFisher is in use today in marketing firms, corporations, engineering and planning firms, ad agencies, schools, law firms and everywhere that ideas can make a difference. Many of today's successful writers, inventors, trainers and students use it to enhance their creative thinking skills. Using IdeaFisher you can develop new products or services, develop names for products, position products, develop strategies, create advertising campaigns, design procedures, policies and group objectives. Writers use IdeaFisher to develop story, script and article ideas, write speeches, jokes or even legal briefs. Trainers use it to assist in counseling and personal growth skills, as well as to help students to organize thoughts and projects.

NOW AVAILABLE — SPECIALIZED QBank MODULES

Requires the IdeaFisher.

The Presentation Planning Module™: *How can you be confident that you have prepared an effective presentation?* Creating effective speeches and presentations is an ongoing dilemma for many people. Preparation is the key to success. Fisher Idea Systems has designed a new tool to help you structure your efforts and produce better results. The Presentation Planning Module contains over 300 specific, common sense questions that systematically guide you through the creative and planning process. The questions help you identify your primary objectives and they assist you in developing and delivering your message with confidence and effectiveness.

The Strategic Planning Module™: *Where will your company be in five years, and how will you get there?* Strategic Planning is the most vital issue any company or business person will have to face. It is one of the most difficult and demanding tasks you as a leader must effectively resolve.

Fisher Idea Systems has designed a new tool to help you structure your approach to the planning process and produce better results. The Strategic Planning add-in module for IdeaFisher contains more than 700 specific questions you should consider when thinking about the future.

The module consists of two components. The first, "Developing a Strategic Plan," is designed to guide you through an analysis of your current situation. This will enable you to understand your strengths and weaknesses. The second, "Implementing a Strategic Plan," is designed to guide you through the issues involved in putting your plan into action.

FISHER IDEA SYSTEMS

BAK2435 IdeaFisher	\$385.00
BAK2436 Strategic Planning Module	\$65.00
BAK2437 Presentation Planning Module	\$49.00
Macintosh Plus, SE series, or II series with 1MB RAM and 7MB of hard disk storage.	

Lotus 1-2-3 For The Macintosh!

REVIEWER'S NOTEBOOK: The thoroughbred of Macintosh spreadsheets. Not a step-child of the original DOS product, Lotus 1-2-3 for the Mac has been designed from the ground up to exploit the power and flexibility of the Mac. Revolutionizing financial software with true 3-D worksheet capabilities: Excel doesn't have it, Claris Resolve doesn't have it. Fully featured, with System 7 support; completely customizable with desktop tear-off menus, most functions require just a mouse click and it's packed with "D" power. Excel users will be surprised at the power and grace engineered into Lotus 1-2-3 for the Mac.

Lotus' deep understanding of advanced spreadsheet and financial modeling technology is present here. True 3-D worksheet management, incredibly nimble relational database power and easy-to-use formulas. Over 14 million people rely on the Lotus concept to create budgets, perform precise forecasting and instant analysis. Proposals and presentations ring with clarity with Lotus' financial graphs and tables. It's easy to edit cells, create graphs, and import data, using the same menus, tools and file formats across worksheets, graphs and macros.

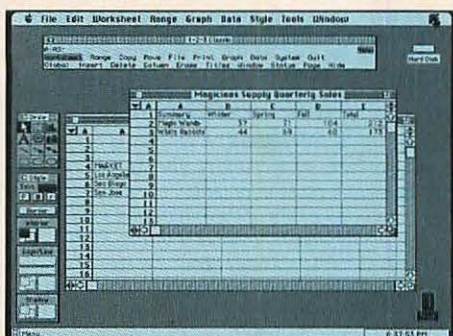
Using 1-2-3 for the Mac is fast and simple. It emulates new System 7 and provides the classic 1-2-3 menu for complete keystroke compatibility. We love the use of floating toolboxes and palettes, allowing customization of your workspace. Moving around is silky and streamlined, allowing you to quickly select ranges (before or after starting commands). You get in-cell editing and the ability to directly manipulate chart elements. You also get 256 colors, 49 different fill patterns and 230 line styles and thicknesses for use in your spreadsheets.

On to the power: Along with the brutal power of

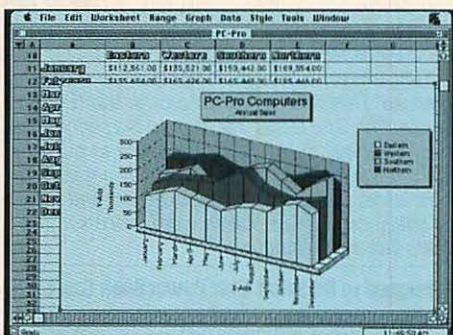
3-D worksheets, you can easily customize database forms for automatic fill-in and printing, perform a host of advanced relational capabilities, including swift queries (a particularly useful feature), an ever-active macro recorder (an incredible time saver!), and automatic compression routines for any printer. By the way, Lotus throws in a free copy of Adobe Type Manager.

With 1-2-3 for the Mac, complicated tasks, like consolidations, don't require tedious linking or endless dialog box activity, just a couple of mouse clicks is all it takes. Easily bring remote data right into 1-2-3 through DataLens and the Apple Data Access Language. Read FoxBase and dBASE files directly.

Lotus 1-2-3 for the Mac towers over the capabilities of Excel in a host of areas. Its ability to perform true 3-D functions is an enormous advantage. And the spectacular range of colors and graphic devices available within the worksheet. Excel doesn't allow you to directly manipulate elements in charts, or perform in-cell editing Lotus 1-2-3 for the Mac does. Excel doesn't include relational capabilities, floating toolboxes or palettes, you can't customize your workspace or have your macro recorder on all the time. 1-2-3 does. Order your competitive upgrade today.



"Classic" 1-2-3 menus work the same as the 1-2-3 everyone knows and love. (Or use the standard Mac menus — your choice.)



Fantastic charting including 2-D and 3-D charts in numerous styles and types — all available with the click of the mouse. And only 1-2-3 has floating toolboxes for ease-of-use.

LOTUS 1-2-3 MAC

BAK2485 Lotus 1-2-3 Mac \$375.00
BAK2486 Lotus 1-2-3 Mac Upgrade \$99.00

The Gold-Plated Trash Can Syndrome!

REVIEWER'S NOTEBOOK: We're not sure, but we think that this is the only true trash utility in world. And while trash has never seemed like a problem area, TrashMaster provides it with some amazingly helpful capabilities. One of the most important features is in the area of security. TrashMaster actually allows you to erase confidential files completely — with no chance of recovery using even the most sophisticated utilities, and conforming to the United States Department of Defense specifications for discarding files. TrashMaster allows you to automatically empty the trash with any number of "filters" that discard what you want, when you want. Empty trash hourly, daily, or at shutdown by date, size, type or name. Selectively empty trash by just selecting from the menu. Simple, fast and a great utility that you never may have considered. Just use it once and see what you've missed.

TrashMaster includes Incinerator, a new utility for System 7 trash management, along with a variety of useful trash-related tools. TrashMaster allows manual selection for emptying trash, building a hierarchical menu from the "Empty Trash" menu item in the Finder's "Special Menu." Selecting from the hierarchical menus will empty the selection. Or, you can make everything automatic! Define any number of "filters" to determine what trash will be emptied. Filters include size, age, file type, creator and name. Empty trash can be done immediately, hourly, daily or at specific events such as disk eject, startup and shutdown.

The Incinerator automatically erases confidential files — for good! TrashMaster gives you the ability to always erase files that are thrown in the Finder's trash and then emptied. There is absolutely no



chance of accidentally deleting the file before incinerating.

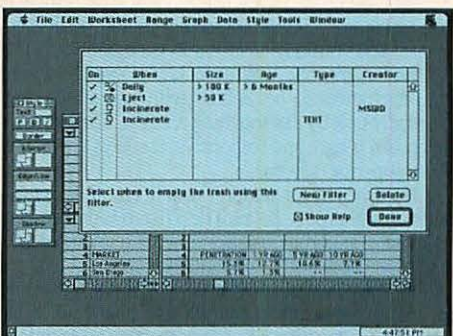
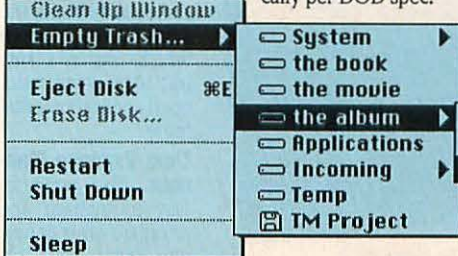
About the confidential erase feature: Based on DOD government spec, actually erases the file 3 times. Instead of just writing zeros over the contents of the file once, the file is overwritten with zeros

once, then written with ones, then with zeroes again. No chance of any recovery. Very simple to use, fast and easy to make better use of your trash.

Selectively Empty Trash. Simply select from the menu and it's gone.

Automatically Empty Trash. You choose what (by date, size, type or name) and when (hourly, disk eject, shutdown, etc.). It's fast and simple.

Erase Confidential Files. Choose what (by name, type or creator) gets erased automatically per DOD spec.



Create filters for precise automatic "Trash Empties" & erasures.

Trash Warnings. Similar to the trash warnings given by the Finder. The warnings apply only to the selection. Hold down the option key to skip trash warnings if this option is not set. An "Empty All Immediately" feature will delete a file upon dragging it onto the trash. All of which makes TrashMaster a very handy utility. The ability to securely delete confidential files is a valuable feature.

TRASHMASTER
BAK2504 TrashMaster ... \$59.95
Runs on any Mac; requires System 7.

Reports
Secret Doc
Source

Aliases.h
Finder.h

The Hierarchical Empty.
Delete exactly the files you want — when you want it done!

THE SHARP WIZARD MISUNDERSTANDING!

REVIEWER'S NOTEBOOK: It all started a couple of years ago. From sharp minds came the fabulous little organizer that had the potential to change the way busy people take care of their information. It offered all the power and functionality of the Mac — in a fast, capable little package about the size of an ordinary checkbook. It offered an extra wide 40 character by 8 line screen for a wider view, a QWERTY typewriter-style keyboard, up to 128K of memory, "one-button access" to any of its built-in features, the ability to run spreadsheets, compatibility with IBM and Macintosh desktop computers, a slew of personal organizational tools — all running on standard CR-2032 batteries.

But everyone thought it was just an electronic notepad. That's like saying the Stealth bomber is just an airplane. The fact is, The Wizard is a serious business machine. Sure, it's a great place to put all of your "gotta-have-it-now" information; phone numbers, addresses, appointments, expenses and strokes of brilliance — and a built-in word processor — but that's just the beginning.

Designed to Do What Your PowerBook Can't. The Wizards from Sharp are sophisticated, powerful computers designed specifically to organize all of your personal information. Whether you're jotting down names, numbers and expenses or creating 3-D charts and downloading spreadsheets. Its power has been allocated to fast, easy collection, storage and retrieval of anything. The Sharp Wizard delivers the ultimate in portability.

The Wizard focuses on the fundamentals. Like an extra wide, super-crisp screen which allows an impressive 40 character by 8 line view. The display is the single most important feature in any small computer, and nothing I've seen compares to The Wizard. I love the way each key is exactly where you'd expect it to be. Search with one stroke, perform any task by just touching an icon. The Wizard's keyboard is tight and responsive; the keys are crafted from superior materials.

Hold it in your hand — you'll see and feel the attention to precise detail. The Wizard is deceptively light and superbly balanced, with a mar-resistant case that can handle life on the road.

I've been using a Wizard OZ-8200 for a number of months now, and I can tell you that it fills a big need in my business life. I used to carry a Macintosh Portable and quickly realized that I spent too much time babysitting the thing, along with all of my programs, files and diskettes. What I needed is something much smaller and lighter, yet fast and powerful. I carry my Portable sometimes — but my Wizard is always with me. Unlike my Portable, which requires booting-up, opening a word processor or note pad, the Wizard requires just one key-stroke and is ready to receive my thoughts.

With the software now available for the Wizard, I can run spreadsheets, create finished documents, organize my ex-

penses, communicate with my desktop back at the office or my Mac at home — even send faxes and play a few furious rounds of Hatris or Box Jockey! I've also quit carrying my pocket tape recorder to record ideas and memos — the Wizard does it better.

When you think about it, a Portable is often overkill for road trips — what you need on the road is a small, fast, convenient machine designed to gather information now. The Wizard is the perfect answer, providing all the functionality of a Mac with an optional spreadsheet, memo pad and other amazing organizational tools. Just touch an icon and the Wizard is ready to go! The Wizards feature huge (40 character by 8 line), super-crisp screens, solid QWERTY keyboards, full compatibility with your desktop Macintosh or PC — and with the new OZ-8200, you'll pack 128K of memory!

The Wizard does so much more. The real news is that the OZ-8200 128K Wizard is in stock and ready to ship. With this powerhouse in your briefcase, you're ready to do just about everything you do on your desktop Mac or PC. And the Wizard's sleek design makes it the perfect traveling companion (unlike the excess baggage of a laptop or notebook). It's about the size of a checkbook, weighs almost nothing and runs on standard CR-2032 batteries.

The misunderstanding continues. Pop in the Wizard Money Planner software card and your Wizard becomes a powerful (and full featured) financial calculator. The North American City Guide includes over 12,000 detailed entries about 23 cities: New York, Miami, San Francisco, Toronto, Montreal, Los Angeles, Atlanta and more. The 8-language translator helps you with words and word phrases in several categories: air travel, sightseeing, hotels, restaurants and more. The spreadsheet software is 1-2-3 file compatible and the thesaurus/dictionary contains over 42,000 words and 500,000 synonyms. Oh, and by the way, if you get a free moment, slip in Tetris, Hatris, Box Jockey or Backgammon for some fast-paced fun!

An Organizer for Every Career. Three models are available: The 7000 Organizer Series, The 5000 Organizer Series and the incredibly powerful 8000 Wizards. Each is packed with built-in features, great looking screens, and expandability to a fax, a modem — even to your Mac or PC. With an Organizer or Wizard you're never alone. You get performance without all the little inconveniences.

Organizer Accessories. There's an optional modem, printer, fax and a slew of software cards that turn the Wizard into a fully functioning office, so you can conduct business anywhere. With the Mac Link cable, you can download information from your Mac to your Wizard and have up-to-the-second information when you take it on the road. There are several models to choose from, one for your style of business. It's flexible.

Expand The Sharp's Mind. When you add software and memory cards to your Wizard (7000 & 8000 series only), you put all kinds of possibilities at your fingertips. Memory and applications simply slide under the touch-sensitive screen which acts as a keypad to perform tasks, open applications, and more.

Time Expense Manager. The powerful way to manage and prioritize your schedule, track your ex-

penses and deadlines, and account for time spent on projects or client meetings.



Spreadsheet. Create fully functional, Lotus 1-2-3 file compatible 26-column-by-999-row spreadsheets on your Wizard, or download a spreadsheet from your Mac! The card will hold 64K of data! Built-in features include: 10 templates, complete formatting, sorting and "freezing pane" functions, math abilities, cut & paste and more.

Money Planner. Turn your Wizard into a featured, highly powerful financial calculator. Loan interest rates, depreciation and statistical analysis — or program your own equations! Change one value and all affected values automatically change.

North American City Guide. Includes over 12,000 detailed entries from 23 North American cities: New York, Los Angeles, Chicago, San Francisco, Atlanta, Montreal, and more.

The Organizer Bible. Contains both New and Old Testaments from the King James version Holy Bible. Instantly go to any Book, Chapter or Verse.

8-Language Translator. Translate words and commonly used phrases in English, Chinese, French, German, Japanese, Italian, Swedish and Spanish.

Tetris, Hatris, Box Jockey, Backgammon. From the Soviet Union comes Tetris. The all new Hatris where you must position falling hats on top of each other. And Box Jockey challenges you with over 13 mazes — each one more difficult.

Thesaurus Dictionary. Over 42,000 definitions, 500,000 synonyms, and an 87,000 Spelling Corrector. Can even be used with any of the Wizard's built-in modes.

Something for Nothing! Buy a Wizard OZ-7200, OZ-8000 or OZ-8200 and get a handsome Leather Case and Video Guide FREE! (a \$69.98 value). Buy any 2 software cards — get 1 software card FREE (must be of equal or lesser value!).

**BUY THE OZ-7200 SHARP WIZARD —
GET MAC ORGANIZER LINK
AT 50% OFF!**

SHARP WIZARD

BAK6310 ZO-5200 Sharp Wizard	\$199.95
BAK6311 OZ-7200 Sharp Wizard	\$239.99
BAK6312 OZ-8000 Sharp Wizard	\$299.99
BAK6309 OZ-8200 Sharp Wizard 128KB	\$399.99
BAK6313 Organizer Modem	\$179.99
BAK6314 Organizer Talk (OZ-7000 series only)	\$99.99
BAK6315 Organizer Fax/Modem	\$499.99
BAK6320 Time Expense Manager	\$119.99
BAK6321 Dictionary/Thesaurus	\$129.99
BAK6322 8 Language Translator	\$99.99
BAK6323 Money Planner	\$99.99
BAK6324 Spreadsheet II	\$179.99
BAK6325 Scientific Computer Card (7000 series)	\$109.99
BAK6317 Scientific Computer Card II	\$109.99
BAK6326 North American City Guide	\$79.99
BAK6330 Box Jockey	\$49.99
BAK6331 Organizer Chess	\$109.99
BAK6332 Tetris Game (7000 series only)	\$49.99
BAK6318 Hatris Game (8000 series only)	\$49.99
BAK6319 Backgammon Game (7000/8000 series)	\$49.99
BAK6333 Organizer Bible	\$149.99
BAK6340 Portfolio Card	\$129.99
BAK6341 32K RAM Card	\$79.99
BAK6342 64K RAM Card	\$129.99
BAK6345 128K RAM Card (7200/8000/8200)	\$149.99
BAK6346 Mac Organizer Link	\$109.99
BAK6347 IBM Organizer Link II	\$129.99
BAK6350 Leather Case (OZ-7000 series)	FREE w/OZ-7200
BAK6351 Leather Case (OZ-8000 series)	FREE w/OZ-8000 or 8200
BAK6399 Video Guide (Reg. \$34.99)	CALL
BAK6352 Battery Pack (for OZ-8000 series)	\$34.99
BAK6353 Printer	\$169.99
BAK6354 Dubbing Cable	\$29.99



Pictured: The Sharp 8000

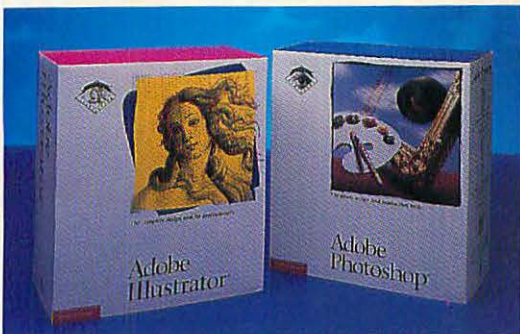
Draw, Paint, Retouch. Make Digital Movies!

REVIEWER'S NOTEBOOK: In addition to the two industry standards reviewed on this page: Adobe Illustrator and Adobe Photoshop, TigerSoftware is proud to be among the first to offer Adobe Premiere, an incredible new title that allows you to combine video footage, audio, animation, still images and graphics to produce digital movies on your Mac. Uses Apple's QuickTime media-integration technology, so multi-unit production hardware isn't required. Adobe Premiere is fast, fun and yields high-quality results. Interactive presentations, television ad concepts and roughs, video databases, merchandising sequences and training sessions are just a few of the wide-ranging uses for this hot new title.

ADOBE ILLUSTRATOR: A slew of impressive industry awards grace the Illustrator box, a clue to the amazing capabilities you'll discover inside. Indeed, Adobe Illustrator is the most powerful drawing, page design and production tool in the world today, ideal for designers with a desire to elevate their work to a new vista of speed and creativity. It's the only system capable of precise illustrations, extensive text handling, fully automatic graphing and color separations. You can work from existing images if you like — just scan it and you're ready to begin. Or draw from scratch using Illustrator's magnificent set of drawing tools, the envy of the industry. It's as simple as moving the mouse.

Professional pages depend on the ability to handle text in a variety of ways. (This package includes free Adobe Type Manager and 13 type faces). Nothing allows more creative opportunities than Adobe Illustrator when it comes to integrating text with your designs, illustrations, line art, images and photos. Just enter your text on screen, or quickly import it from your word processor. Then take control of the kerning, tracking, word and letter spacing.

Create tight wraps around shapes (or any path, like circular type) and images, viewing your alterations on your screen as you work. Flow text from one column to the next, add unlimited numbers of characters and styles from any PostScript Type 1 font (including the entire Adobe Type Library). You can even convert the type to outline images, then create images from them.



Creating charts is a snap with Illustrator. Just type in your data, select a chart type and it's done. Customize your charts with your palette of creativity and revise them in seconds. You'll create top-notch ads, brochures and more, from concept to final production and color separations. In fact, the Adobe Illustrator box was completely created using the product. Color capabilities include smooth 24-bit screen reproduction (8-bit is supported for B&W).

ADOBE PHOTOSHOP: The ultimate color-retouching/image processing system for the Mac. A great pre-press and production tool, Adobe Photoshop has garnered loyal users in all areas of graphic design and color reproduction. Using its extensive features, it's able to create anything you can imagine. Full 32-bit color artwork with full control and flexibility to manipulate and combine photographic images, and the ability to create stunning video effects. Color separations are precise, meeting or exceeding even the strictest standards for reproduction. You can produce bitmapped, grayscale or continuous-tone color; add color; change it or remove it completely. Produce intriguing duotones, tritones and quadtones. And you can use your existing Adobe Illustrator files in your Photoshop images. You've got a great selection of creative tools right at your fingertips.

When you've finished your creative frenzy, Photoshop switches instantly to production mode, allowing full PANTONE color matching, automatic trapping and full CMYK editing for true four-color process proofing. Scan your photographs on any scanner — from low end black and white to high end drums. A host of controls and image filters enhance your creativity and the powerful paint tools are unparalleled.

ALL NEW! ADOBE PREMIERE... Become a movie maker — with the help of your Mac — and new Adobe Premiere. It's the newest creative tool from the leaders in precision graphics and photo manipulation. It's fast, easy and fun to use — just gather your clips and arrange them in the order you want them to play and Premiere handles the rest with blazing speed.

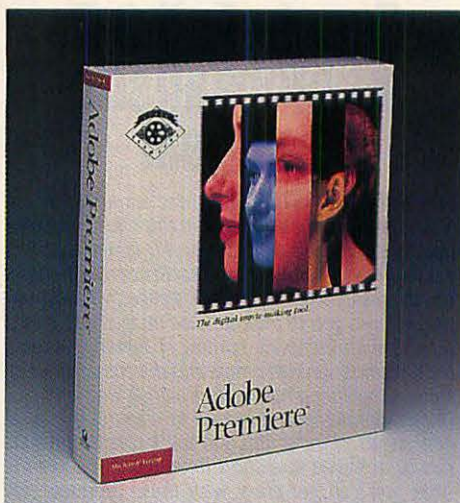
Premiere utilizes the Apple QuickTime extensions to store and import your video and audio files. You can arrange your clips to appear in progression with simple cuts, or overlap them to create dramatic transitions like dissolves, page turns and spins. You can isolate areas of your moving video or still images and superimpose them onto other clips to create a wide range of special effects that will grab your audience like nothing else they've ever seen.

You can use plug-in filters (including Adobe Photoshop-compatible filters) to produce tints, distortions and replications. Using Apple's QuickTime extensions, you get the enormous capabilities of true media integration — and now, you can produce digital movies at an affordable price, for a variety of uses.

And with QuickTime, you can store video footage and accompanying audio on an ordinary disk drive. Copy clips over and over without distortion or loss of quality.

Premiere acts as the control room for your movie studio. From its intuitive interface, you'll see the tracks of your movie in "filmstrip" style. And if you need to make a change, multiple windows provide you with fast access to any editing function. Want to add an effect? Just click any one of the animated icons to select great digital effects. The video windows on your screen also enable a quick preview of source material, digital effects and assembled video. There's even a Timeline display with zoom-in and single-frame viewing. Quickly check your sequences with Premiere's push-button controls, move to any clip instantly. Click to rewind, play, fast forward, record and single-stop, slow-, or fast-motion. As you work, on-screen indicators display time, frame counts, audio levels and storage requirements.

Premiere is packed with special effects. Like transitions (graphic effects used when changing from



one scene to another), choose from a band slide or band wipe, checkerboard, barn doors, cross dissolve, funnel, dither dissolve, iris round, page turn, radial wipe, spiral boxes, roll aways and more — it's like having a state-of-the-art television editing suite right on your desktop! And you'll also get a set of digital image-processing filters that work with just a click to improve contrast, balance colors and help with image correction. Choose from a selection of special effects filters such as: posterization, radial blur, twirl,



Create magnificent video databases...

flip, mosaic, zigzag, replicate and wave. You can also use "plug-in" effects. Adding sound is easy. Premiere automatically synchronizes the audio and video using cue points. Once you select and capture your video and images using QuickTime, lay down your audio narration and effects — you're ready to assemble your final product. Premiere allows you to combine 2 separate video tracks, 1 special effects tracks, an overlay track and 3 stereo audio tracks. Just select and drag segments from any input track during assembly. That's all there is to it! The storyboard-style editing eliminates the need for list management, and your movies are limited only by disk space. The built-in matte generator provides selectable colors, backgrounds and borders.

ADOBE	
BAK2501 Adobe Photoshop	\$555.00
BAK2502 Adobe Illustrator	\$375.00
BAK2503 Adobe Premiere	\$325.00
Adobe Illustrator: Macintosh II, LC or SE product line, Plus or Classic with a hard disk; at least 2 MB of RAM using System 6.0.5 or greater or 4 MB of RAM using System 7. Adobe Photoshop: Macintosh II product line or SE product line with at least 2 MB of RAM; System 6.0.4 or later and a hard disk. Adobe Premiere: Macintosh II family computer; 4 MB RAM; high-capacity hard drive (80 MB or more recommended); System 6.0.7 or greater; QuickTime v1.0 or greater; 32 bit QuickDraw v1.2 or greater. Shipping charges billed actual cost.	

Create Full 3-D, Photorealistic Images!

REVIEWER'S NOTEBOOK: *MacRenderMan* and *Showplace* (bundled together in this offer) represent the finest software available for 3-D image creation, viewing and manipulation. *MacRenderMan* allows you to create incredibly realistic images, while *Showplace* allows you to import those images and create scenes, with complete control of lighting, texture, backgrounds, vantage points and dozens of other effects. Altogether amazing, surprisingly easy and fast. In fact, *RenderMan* was used in creating the academy award winning film, *Tin Toy*. Impressive results can be achieved in a short time, but if you get the urge, you can get crazy with these products and never be seen or heard from again...

MacRenderMan. Fascinating photorealistic design made easy (and fun). Three distinct dimensions in full color, with a variety of surface textures and designs. In our first session, we created several billiard balls with a variety of whacked-out designs and colors in under an hour. That hour passed quickly; most of the real work was handled by *MacRenderMan* transparently.

We began the modeling process by describing the objects (geometry and appearance), the characteristics of the lighting (the light sources) and the view we wanted of the object (the camera, if you will). We then had a scene! We could change the texture of the surface (and how the light reflects off of it) and easily control the various shading techniques. The more you work on your images, exploring the powerful capabilities of *MacRenderMan*, the more detailed your images become. This is a great tool for CAD projects, product design, animation, merchandising, architecture and presentation graphics. Nothing else can compare to the images you'll create with *MacRenderMan*, the most visually accurate picture making product available for the Mac today.

MacRenderMan is used with 3-D design applications that produce *RenderMan* Interface ByteStream (RIB™) files. Use your favorite 3-D design system to shape objects. The design software will record these geometric descriptions into a RIB file and spool the file. *MacRenderMan* reads the spooled RIB file and produces a color rendition, computing it in the background under *MultiFinder*.

The MacRenderMan Software Package. *MacRenderMan* is a package of applications designed to bridge the gap between modelers and renderers on the Macintosh. *MacRenderMan* includes:

- **RenderMonitor.** Similar to the *PrintMonitor* desktop application available under *MultiFinder*, *RenderMonitor* allows you to render images in the background, so you can continue with other functions while it works.
- **Chooser.** The standard Macintosh Chooser desk accessory allows you to select a renderer from among those that are available, and to set up renderer options for each one.
- **PhotoRealistic RenderMan**

Renderer. The *MacRenderMan* package includes Pixar's high-quality renderer, known as *PhotoRealistic RenderMan* (or *PhotoRMan*), as the renderer of choice for most applications. This is the default renderer selected by the *Chooser*.

- **Vector RenderMan Renderer.** A second renderer, known as the *Vector RenderMan* (or *VectRMan*), is also included with the *MacRenderMan* package to generate wireframe images as quick approximations for more detailed renderings.
- **Example libraries and demos.** Example libraries of RIB files, shaders, and texture maps are provided. A sample modeling application called the "Pencil Demo" is also included to illustrate the use of shaders on different parts of a simple model.



Give images 3-D beauty and realism.

Showplace. *Showplace* is the forum for your objects created with *MacRenderMan* technology. Build a dazzling 3-D scene by quickly importing and arranging *MacRenderMan* images, or choose from the library of Pixar *ClipObjects*, including furniture, lamps, a sleek racing bicycle, billboard, shopping bag, a theater spotlight and more. Then turn your camera loose and move around your scene to create spectacular effects and perceive a multiplicity of angles.

Change the "look" of an object by changing its surface: you could have an oak grain table and a stucco-painted wall, or a stucco-painted table and an oak grain wall, or an oak grain shopping bag and brushed chrome walls! With *Showplace*, you can decide the appearance of an object independently of its shape. *Showplace's* ability to combine any object with any appearance (including those you create) is one of its most powerful features.

These "Looks" include: bricks, brushed chrome, gold and copper, concrete, gray and rose granite, veined marble, natural oak, plastic and sky patterns, among others. Manipulate characteristics such as shininess, size, roughness and reflectivity. It's your own world of synthetic reality! Then take a TIFF or PICT image and wrap it around any 3-D object in your scene to create dramatic effects, impossible in 2-D graphics programs.

Using *Showplace*, you could create a slide presentation that features *MacRenderMan* images in a variety of shocking, interesting, unusual and impossible ways. Like messages on balloons and billboards, in the pages of books and emblazoned on the surface of a table. You can add fog, smoke and atmospheric conditions to your scenes, adjust the lighting and create masterful shadow detail.

The Four Showplace Elements.

There are four elements, or "things you can manipulate" in the *Showplace* world. Each element has its own toolbox and a corresponding menu.

- **Objects.** An object is a collection of one or more surfaces. They are the main elements of the scene. An object might be created in some modeling application, or installed as part of a *ClipObject* library. In either case, the



Magnificent pictures, life-like shadows...

object can be imported into a *Showplace* scene and resized, rotated, or moved.

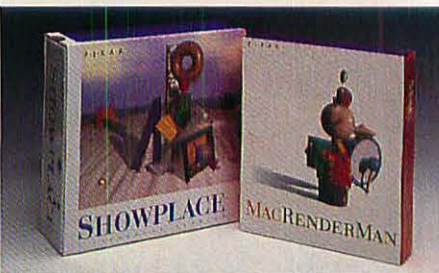
- **Surfaces.** A surface is part of an object that can take on a single appearance. A *Look* can be attached to a surface to give it a certain appearance in the final image. For example, it could be transparent glass, wood grain or metal.
- **Light Sources.** The definition and placement of light sources in a scene is essential to its look in the final image. Shadows, the appearance of spectacular highlights on surfaces, and the illumination of different areas of the scene are all determined by lights.
- **Cameras.** Everything you see in the *Showplace* world, and thus everything that will appear in your final image, is seen through the lens of a camera. You can set up several cameras at various locations to give you different vantage points from which to view the scene. You can move these cameras, save their locations, and choose which to use at will.

Showplace comes complete with a videotape that walks you through the production of a scene in detail. We found that the videotape alone was enough to get us going with *Showplace*, all the functionality is explained in a simple, straight forward manner. Although *Showplace* is a lot of fun just to play with, you'll soon discover how you can work the intriguing scenes into your presentations and on-screen demos.

These fine products transcend any paint or draw programs you've ever used, employing technology seen only in high-end design and animation studios. The images will certainly stop an audience! If you need a presentation that's a cut above, nothing will deliver the impact like *Showplace*.

ALSO AVAILABLE IN CD-ROM VERSION

MacRenderMan and *Showplace* applications, complete online documentation for both products, a gallery of images created with Pixar products and a sample of Pixar animation all on one CD-ROM!



MACRENDERMAN & SHOWPLACE

BAK2410 *Showplace & MacRenderMan* Bundle \$635.00
BAK2411 *Showplace & MacRenderMan* CD .. \$435.95
Showplace: runs on any Macintosh II family computer with a floating-point coprocessor, 32-bit QuickDraw, *MultiFinder* and at least 5 megabytes of internal RAM (8 is recommended); color display system (for full-color viewing, 24-bit is recommended). *MacRenderMan*: Macintosh II, IIx, IIcx, IIcx or IIx running *System* tools 6.0.3 or higher; *MultiFinder* and 32-bit QuickDraw installed; 5 MB of disk storage; 8- or 24-bit color display system; 5 MB of memory (8 MB recommended); *RenderMan* compatible design package.

The Finest Removable Hard Drives Made.

REVIEWER'S NOTEBOOK: Highly acclaimed, 100% reliable and backed by a solid warranty, the PLI line of removable cartridge drives is the most respected in the industry. When your files and applications grow to monumental size, when you want to perform fast backups or when you want to take heavy megabytes on the road, nothing gives you the unlimited capabilities of the PLI Infinity 40 and 88mb drives. The PLI Cartridges carry a full 5-year warranty. Includes PLI's famous TurboWare utilities. One other note: The PLI drives and cartridges are thoroughly tested, far exceeding industry standards, so when you install a PLI, you're ready to go — with uninterrupted performance.

With much of the design and layout work done at TigerSoftware on Macs, our PLI cartridge drives are critical to a smooth operation. Without their reliable service and unmatched speed, getting our hands on files would be nearly impossible. Our choice: the PLI Infinity 88 Turbo drive. This remarkable instrument carries a 60,000 hour MTBF rating. It features the highest level of filtration, quality-engineered circuitry and is virtually impossible to damage by incorrect cartridge insertion (one of the leading causes of drive failure).



Designed and engineered for rugged use, the PLI Infinity 88 Turbo has the industry's highest tolerance to non-operating shock (our 88 Turbo once survived a four-foot fall onto a tile floor). The 88 Turbo also includes PLI's TurboCache, a disk drive accelerator program that dramatically increases the speed of all of your SCSI drives. TurboCache uses system memory to create the cache, boosting data throughput by a whopping 50% for many applications. Of course, you'll get all the features that have made PLI the name asked for most when it comes to removable cartridge drives including external switches for termination and SCSI address, UL-approved, individually tested power supplies, long-life 50-pin Centronics SCSI connectors, an external fuse and (unlike other drives) you get the complete kit, with all necessary cables and accessories. The Infinity 88 Turbo beats Bernoulli hands down when it comes to price, performance and value.



Another PLI advantage: your Infinity removable

cartridge drive comes complete with useful, easy-to-use software hand-picked by the experts at the renowned Berkeley Macintosh User's Group — over 15 megabytes! It also includes PLI's own TurboCache and TurboOptimizer software, with a combined retail value of \$200.00. These tools add to the performance and flexibility of your Infinity 88 Turbo system. And only PLI provides them.

PLI conducts 24-hour drive burn in, component level testing, self-diagnostic routines and a slew of other tests, many of which are proprietary to PLI.

PLI DRIVES & CARTRIDGES

BAK2460A Infinity 88mb Removable Single External Drive	\$845.00
BAK2460B Infinity 40mb Removable Single External Drive	\$645.00
BAK2465A 88mb Cartridge (Uniform, 1-yr. war) ..	\$139.00
BAK2465B 44mb Cartridge (Uniform, 1-yr. war) ..	\$69.00
BAK2465C 88mb Cartridge (Format, 5-yr. war) ..	\$149.00
BAK2465D 44mb Cartridge (Format, 5-yr. war) ..	\$109.00

Get Your Priorities Straight!

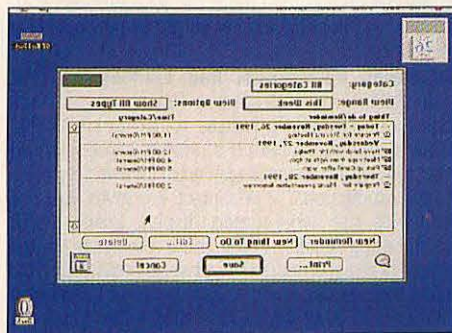
REVIEWER'S NOTEBOOK: First Things First is an innovative new time manager that doesn't require hours of laborious setup to be incredibly useful — it's incredibly useful right out of the box. A unique Floating DeskClock Icon stays "on top" regardless of how crazy your desktop gets. Runs under System 7 in addition to System 6. Extremely fast. Non-obtrusive, with 30 action/task categories. There's even a built-in demo program for you to copy freely and share with other Mac users. We can't really manage time — it flows on relentlessly — but we can do something about our priorities!

Perfect timing. It's either the result of incredible luck or determined effort. In business, however, you can't always depend on luck. That's where First Things First comes in. The premise is that even the most organized people have trouble keeping track of all the things they must (and want to) accomplish.

Sound familiar? Time-dependent tasks, appointments and deadlines simply don't care if you have enough time to organize them. And unless a time manager is fast and easy, it is of little use. First Things First is extremely easy to use, delivering instant access to your list of tasks and details. It allows you to organize your efforts by category or project, and keeps you in touch with the big picture even in the wake of interruptions, crises and priority shifts.

You'll quickly create categories, establish reminders and things to do, view your lists, print your lists and have almost unlimited capabilities to customize First Things First to fit your personal style. That's important.

I was at first intrigued with the Floating DeskClock. It gives you the time and date in either expanded digital or analog form. There's a little "tear-off" calendar that helps you manage your schedule, review priorities and reminders. It's very cute, but also very powerful and can be moved wherever you like, reduced to just time or time and date.



Priority Power!

- **Setting Priority when creating New Things To Do.** Now you can easily set one of four priority levels by simply clicking on 1 through 4 when creating a new item.
- **To Do Items listed with priority number.** To Do items are listed in the main dialog box and are preceded with a priority level number (1-4) positioned in a 3-D box.
- **View by Priority — a whole new dimension of power!** A fourth pop-up menu at the top of the main dialog box lets you view Things To Do by Priority Level (Priority One only, Priority 1-2, 1-3 and 1-4) as well as by Category and Timeline.
- **Priority One splash window to stay focused!** Anytime you want, you can do an Option/Click on

the clock and have First Things First pop up a window that only includes your Priority One items for today! This is an incredibly powerful way to stay focused on the most important things to do!



Customizable Time Range. New Version 2.0 offers you the ability to customize the time range of the tasks and reminders to be viewed. Easily call up a dialog box to input the start and stop date.

Import/Export — Great for Mac Portables. Version 2.0 offers flexible options for converting personal information data from other programs into First Things First and exporting to text formats or to update other First Things First data files. This makes it ideal for Mac Portable users who want to be sure they have the most recent task and scheduling information on both their portable and desktop Macs!

MUG News Service, the internationally syndicated information resource for 2000 Macintosh user groups worldwide, has selected First Things First as Utility of the Year.

VISIONARY SOFTWARE

BAK2403 First Things First 2.0	\$49.00
Any Macintosh with at least 1mb of RAM and System 6.0.4 or later.	



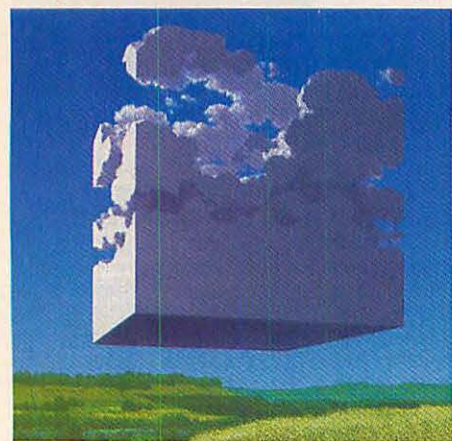
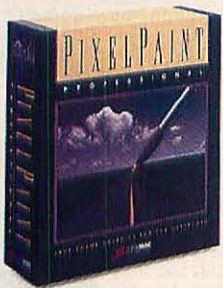
Hot Studio Color!

The Finest Graphics Cards, Color Displays, Digital Video Capture and Pro Paint Software... SuperMac is the source for color.

REVIEWER'S NOTEBOOK: In this article, we review the entire line of SuperMac professional graphics tools for the Mac. Professional, because they combine to create the most comprehensive system. Capable of ultra high-quality graphic work — while keeping an eye on the budget. We're particularly impressed with PixelPaint Professional, the most designer-oriented paint product we've seen, with a highly intuitive interface. The most useful set of paint and image manipulation tools round out its toolbox, which gives you complete flexibility and control. Take a step beyond reality with PixelPaint Professional's effects. We'll also review the Spectrum series of color-blasting graphics cards and award-winning video displays.

PixelPaint Professional: High-powered, graphics-oriented tools for the advanced user. Version 2.0 includes a broad array of paint capabilities along with extensive photo manipulation and enhancement features. Open dozens of individual windows and cut/paste images and elements between them, streamlining the design process. Move quickly to create new layouts — PixelPaint Professional can keep up with your fertile imagination! The tools are magnificent; create shapes, fine-tune location and boundaries. The brush and paint tools allow instantaneous changes in line width, angle adjustment, Bezier curves and scaling the overall size. Quick zooms give you precise image control, clone artwork with the advanced rubber stamp, define the colors you want—to create just the exact picture you had in mind.

The color features are unsurpassed, ideal for design. PixelPaint Professional's trademark is the ability to manipulate and enhance color — including the industry's most exact color blend and fill. Go beyond



simply blending two colors. You can define multiple color definitions within the blend for previously impossible color effects. And you can create seamless color gradients with PixelPaint Professional's breakthrough Macintosh color control. Produce roughs of original concepts, tight comps and refine designs —

right up to prepress. From scanned photographs and illustrations to the creation of beautiful originals, PixelPaint Professional provides all the tools you'll ever need. And you won't believe the results.

Features and Benefits:

Familiar Interface: Utilizes powerful paint tools in an intuitive manner, minimizing the learning curve and enabling productive work immediately.

Multiple documents: Work with as many images as you like. Autoscroll through images up to 4K by 4K in size — up to 300 dpi.

Wet Paint Shapes: Reposition a figure or test after you have drawn it for creative flexibility.

Merge Function and Buffers: Combine other artwork files or create a montage of scanned photos in your work.

Transparency Control and Advanced Anti-Aliasing Control: Powerful painting features control paint opacity to create photorealistic images. Anti-aliasing eliminates the "jaggies," creating smoother shapes and sharper text.

Powerful Masking: Built-in "masking tape" gives ultimate control over painting techniques. True 8-bit support for semi-transparent masks during the entire process — not just for photo composition.

Intuitive Color Mixing: Mix colors on screen as traditional artists mix paint for unlimited color possibilities. Create gradients exactly as you want them.

Image Processing Effects: Color correct photos or adjust contrast and balance. You may also emboss, mosaic, posterize, tint, and more.

Color Selector: Choose colors with a method you're familiar with: PANTONE® MATCHING SYSTEM, RGB, HSV, Color Theory, Process Color (CMYK) enable the user to work with industry-standard color specifications.

Prepress Printing: Four-color or spot color separations enable the user to print high-quality output to devices such as the Linotronic 300. Supports PostScript and Color QuickDraw output to a wide variety of devices.

SuperMac VideoSpigot and VideoSpigot Pro: VideoSpigot and VideoSpigot Pro are SuperMac's digital-video grabbers, for use with Apple's QuickTime in making incredible animated sequences and Mac movies. It's fast and easy, great for a variety of in-house productions. VideoSpigot Pro gives you the ability to use large-screen display images with breathtaking results. Using these precision crafted boards (and accompanying software) turns your Mac into a soundstage, ready to capture vivid full-motion video — all fully digitized. Capture live video by quickly connecting to a VCR, laserdisc or video camera. Even if you've never put a video production together, VideoSpigot puts you in the director's chair. The VideoSpigot Pro contains greater speed and delivers 24-bit color on 12" and 13" displays. It's the graphics power tool for the hot design shop. Call us for more information on the VideoSpigot and new VideoSpigot Pro.

The SuperMac 19" SuperMatch Display: A new standard for designers and production use. The super performer, complete with color-matching capabilities, breaks technological ground with an extended color range and the accuracy of a natural white point (a neutral point that determines other colors) for true, WYSIWYG color reproduction. Added realism with richer reds and deeper greens than any other display, based on European Broadcast Union (EBU)

standard phosphor technology. Bright, sharp images all the way to the corners! Flicker-free, great with complex and full-page graphics. Infinite control of brightness and contrast.



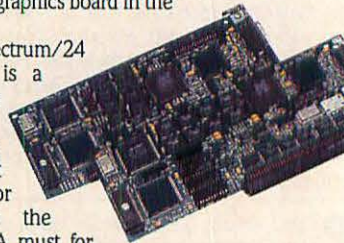
The 19" SuperMatch Display.

An exceptional value; hundreds of dollars less than Sony and other manufacturer.

The SuperMac 19" Platinum Series: Four times the display area of a standard Macintosh, the 19" Platinum is ideal for the exacting needs of business documents and gray-scale publications. Pinpoint-precise image accuracy and screen reproduction, includes flicker-free technology, white-point phosphor reference and OCLI antialias filter. NO fuzziness, no blurs — you'll always see razor-sharp images on the Platinum from SuperMac. Reasonably priced, engineered for reliable performance.

THE COLOR ITSELF: The SuperMac line of graphics cards explodes with rich, brilliant color — bringing 100% display accuracy to any project. The Spectrum Series has a board for every Mac and delivers spectacular results for artists, designers and illustrators. There are three 8-bit boards to choose from, the fastest you've ever seen; three 8+24-bit speed demons and a 24-bit monster that's the envy of the industry. The Spectrum/8+24 PDQ (and Spectrum/8+24 PDQ si) deliver more speed and flexibility than Apple's 8+24GC card, with a much smaller price tag (along with the longest warranty in the business). It's workstation-graphics performance at an average of 30% less cost. The Spectrum/8+24 series contains a small microprocessor on board that achieves the maximum possible speed for frequently used graphics routines in applications like Adobe Illustrator, Photoshop, QuarkXPress and Aldus FreeHand. And The Spectrum/8+24 supports more displays from more manufacturers than any other card: Apple Color, Apple Portrait, Radius and RasterOps. This is the hottest graphics board in the business.

The Spectrum/24 Series III is a legend in color technology, kicking out great color throughout the spectrum. A must for the serious designer, perfect for color prepress work.



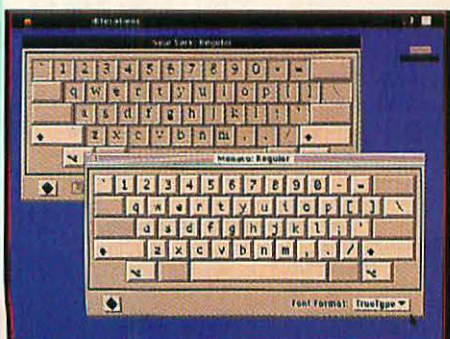
SuperMac Graphics Cards	
BAK2475A Monochrome	\$395.95
BAK2475B Spectrum/8 si	\$795.95
BAK2475C Spectrum/8 LC	\$795.95
BAK2475D Spectrum/8 Series III	\$795.95
BAK2475E Spectrum/8 24 PDQ	\$1095.00
BAK2475F Spectrum/8 24 PDQ si	\$1095.00
BAK2475G Spectrum/24 Series III	\$2395.00
SuperMac Graphics Displays	
BAK2476A 19" Platinum Display	\$1095.00
BAK2476B 19" SuperMatch Color Display	\$2095.00
SuperMac Digital Video	
BAK2478A VideoSpigot si	\$395.00
BAK2478B VideoSpigot LC	\$395.00
SuperMac Pixel Paint Software	
BAK2477 PixelPaint Professional	\$495.00
BAK2479 PixelPaint (Regular)	\$155.00
<small>Requires System 6.0.5 (6.0.7 for VideoSpigot) or later with 2 MB or more of RAM, a hard disk with at least 3 MB of free space, an 8, 16, 24, or 32-bit video card, and a color or grayscale monitor.</small>	

Enhance And Modify Your Fonts With Amazing Results!

REVIEWER'S NOTEBOOK: Now anyone can get typographic-quality effects and enhancements using their existing type, with FontMonger, the super fast, simple-to-use type customizer. Modify a wide range of your type's characteristics, including the ability to merge individual characters to create custom faces. Modify existing typefaces into all small caps and use characters you've never been able to access before.

This easy-to-use utility can save you hundreds (or even thousands) of dollars by converting PostScript Type 1 (for use in Adobe Type Manager) and Type 3 fonts to the advanced new TrueType format.

Here's another fascinating FontMonger capability: you can actually merge characters from several font families, to create unique small caps, composite characters, customized faces and logotypes.



Combine typefaces, remap keyboard characters or convert between type formats.

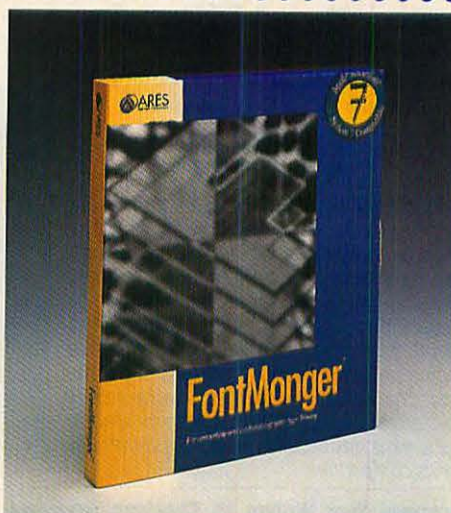
FontMonger also offers support of Adobe Illustrator and Aldus Freehand files. You can create or modify characters within programs and build these modified characters back into a font. It's fast, easy and very handy when using multiple programs. FontMonger's type modification tools provide a vast assortment of intriguing capabilities including: access to unencoded characters, creation of oblique characters, generation of superscript and subscript characters along with generation of slash and bar fractions (some of which have been previously hidden, others you probably never knew you had).

Using FontMonger, you can convert fonts one face at a time, as you need them, or in batches so your entire library is at your service. Just one step converts the batch. In addition, you can control the character widths of your fonts (the space between characters) the horizontal and vertical scaling, the slant and character width.

Outline Fonts. Outline fonts that describe the lines and curves which make up their characters. They can be used to draw characters at any size on any screen or printer. With the arrival of Adobe Type Manager (ATM) and Apple's System 7.0, you can now use outline fonts throughout your Macintosh system. Fonts you use this way must be in PostScript Type 1 format for ATM, and in TrueType format for System 7.0.

TrueType. The TrueType font format was developed by Apple for System 7.0. The format has been adopted by Microsoft for use with Windows.

Type 1. Before 1990, only Adobe could produce fonts in PostScript Type 1 format, so if you wanted to



use ATM you had to buy Adobe fonts. Now, the Type 1 font specifications are publicly available, and you can buy Type 1 fonts from many vendors.

Type 3. Until the Type 1 format was made public, non-Adobe PostScript fonts were in the less-capable Type 3 format. Type 3 fonts are usually slower to print, produce lower-quality results and do not work with ATM. You may never need to convert any fonts to Type 3 format with FontMonger (although you can). Instead, you will probably want to convert Type 3 fonts to Type 1 and TrueType formats.

ARES FONTMONGER

BAK2415 FontMonger \$59.95
Requires Macintosh Plus or newer; 1 MB of memory; two floppy drives or a hard disk; System 6.0.2 or later.

Advanced Grayscale Image Enhancement And Manipulation.

REVIEWER'S NOTEBOOK: If you've got a scanner, this product is for you. A professional-quality image manipulation product with scores of tools, filters, masks, retouching features and more. Supports TIFF, PICT and EPS. Features a customizable tool palette, advanced magnification features and input/output device calibration for best-possible reproduction. It is a true second-generation grayscale image enhancer, so you have complete control of your scanned images, not just two or three options. Create images that you simply couldn't before—clean, crisp halftones from imperfect originals. Grab just parts of a photograph, create a montage, filter images for reproduction with higher quality than you've ever seen before. In use today by graphic designers, scientists, publishers and professional retouchers. Magnificent anti-aliasing tools to eliminate jagged edges and uneven tones.



Images can be scaled, rotated, resampled, aligned, cropped, cloned, flipped, stretched, slanted, distorted and displayed in a variety of perspectives. A few moments of experimentation with the Enhance filter set will be an engaging experience. Create line images from photos, clean up blurry originals, posterize and emboss images, equalize images for perfectly even grayscales. There are simply endless numbers of combined effects.

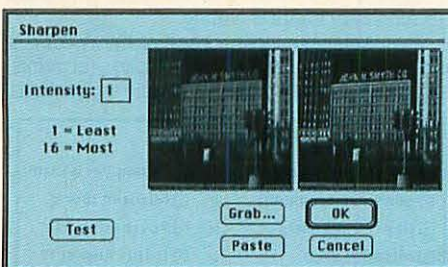
The manual is excellent, providing a quick education on the construction of photographic images, how to scan them for top-notch results and how to quickly calibrate your scanner and output device to make the most of their abilities. You'll learn about the nature of grayscale, how it can be manipulated and improved. The difference between halftoning and dithering, and when to use each in your work. Using Enhance, you can create your own images, or manipulate any existing image created on a scanner, video digitizer, or virtually any other source.

When you get serious about your newsletters, advertisements and other desktop publications, Enhance is the only tool for the job of manipulating second generation images. Nothing else we've ever seen at any price delivers more professional tools (with the ease of use and speed required to make them truly useful) for putting photos on paper. Enhance's toolbox is fully customizable. And, although Enhance was designed to provide the ultimate in black and white image enhancement. No other grayscale image system even comes close.

Using these tools, there are an infinite number of modifications available for any given photo. Blur, sharpen, brush, dropper, edge detection, smudge,

masking and more. You can work with any portion of a photo, retouching just the foreground subject or just the background. Eliminate objects, deepen contrast, posterize just a portion of the photo and eliminate unwanted shadows — even lighten shadows.

Create dithered images or convert scanned dithered images to gray scale or vice versa. Create surrealistic effects by combining blurred or smudged backgrounds with razor-sharp foreground images. The toolbox functions are familiar to those in your paint program, but include far-reaching capabilities that provide unlimited effects. The feathering feature allows you to create soft-edged images and the Fringe option allows you to create spectacular borders.



ENHANCE

BAK2447 ENHANCE \$235.00
Macintosh SE30, LC or Macintosh II family of computers with 2 MB RAM; 8 bit color video card with gray scale or color monitor recommended.

The Best Way to Improve Your Writing.

REVIEWER'S NOTEBOOK: One of the more popular categories in software is the grammar checker, arguably the most important word processing add-in. With today's business climate, poorly written correspondence is separating success and failure. RightWriter's depth and attention to the details of written communication makes it the premier grammar checker for the Mac. Conclusive testing has established RightWriter as the most accurate, most flexible and easiest to use over any of its competitors.

Improve Your Writing by Checking Grammar, Style, Punctuation, and More. In business, you're judged by what you say — and by how you write. Nothing can kill the confidence of a prospective customer or client faster than a proposal littered with grammatical, usage and punctuation errors.

The fact is, there's no excuse for sloppy, error-filled written communication. Each letter, report, proposal, press release or other business document you prepare should represent you as a professional.

RightWriter 3.1 is designed to flag errors in your writing from a rule base of over 4,500 — including rules of grammar, style, usage, punctuation, sentence structure, subject-verb agreement and more. RightWriter produces a copy of the document and performs its analysis. Then displays (or prints) your document with flagged errors and explanations. These explanations are your guide to better writing.

Good Writing Is Good Business. Good writing can mean profit for your organization, satisfaction for your customers, and advancement for your career.

A well-written sales letter or proposal can make the difference between a successful sale and a lost opportunity.

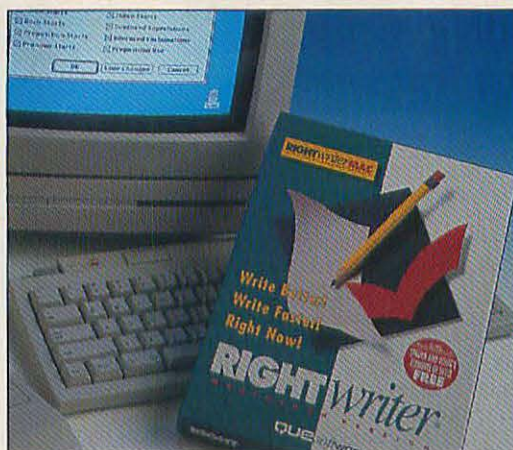
Clear, easy to read manuals result in customer satisfaction and lower support costs. Good writing helps you get your best ideas across.

RightWriter works with your word processor to help you make your business writing strong, clear and to the point. Not a spelling checker — RightWriter is a sophisticated expert system that applies the rules of good writing directly to your documents.

To use RightWriter, create a document with your word processor. Then run RightWriter on the document using a few simple mouse selections.

RightWriter inserts comments into your document pointing out problems in style, word usage, grammar, and punctuation. Use your word processor to make the changes you consider appropriate. Then tell RightWriter to remove its comments. The result — strong, clear business writing.

RightWriter produces a copy of the document and performs its analysis. Then displays (or prints) your document with flagged errors and explanations.

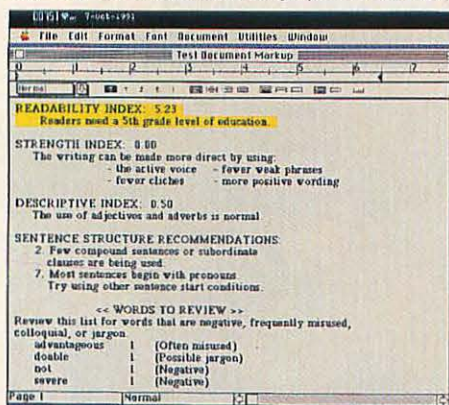


These explanations are your guide to better writing. The result: clear, crisp documents that deliver your ideas with maximum impact.

Change Writing Styles. RightWriter is primarily an aid for Business and Technical Writing. The RightWriter rules are based on the mistakes commonly made by business professionals when writing letters, memos and reports. Since many of these rules are common to all types of writing, RightWriter is also useful for other applications.

Additionally, RightWriter allows you to select the type of writing before analyzing a document. By making this selection, you actually change the rules RightWriter uses for the analysis.

The standards for business writing differ in several important ways from those for fiction. Where business writing should be concise, fiction must often set the scene. Also, good fiction writers create their own style and use literary license. With fiction selected as the type of writing, RightWriter can find many common problems in fiction writing, without imposing the stricter rules employed for business



A Detailed Summary. Along with specific recommendations about your writing, RightWriter provides information about the document's overall strength and clarity. These comments are your guide to better writing.

writing. The types of writing you can select include: general business, technical reports and articles, proposals, manuals and fiction.

RightWriter also provides an option to change the word dictionary. This is especially useful for technical, legal, medical and other types of writing with specialized vocabularies. For advanced users, there are even options to turn specific rules on or off.

How RightWriter Knows When Your Writing is Wrong. RightWriter proofreads your documents using two artificial intelligence (AI) technologies called parsing and expert systems. Each technology has a separate, unique function, but together they rely on one another to identify parts of sentences and to locate errors.

Parsing performs the critical function of sentence dissection. It first identifies sentences' individual parts, breaking each sentence into major phrases and looking for both dependent and independent clauses. Parsing goes further by identifying the subject and predicate of each clause and noting the word's part of speech. This technology, for example, can tell the difference between "can" used as a noun and as a verb.

The expert system relies on the parser to break down sentences so it can determine their accuracy. RightWriter's expert system examines your writing, judges the accuracy, and suggests improvements without your making any specific query.

The Compatible Grammar Checker. RightWriter for the Mac is fully compatible with any document from: MacWrite® version 2.2 through 5.0; MacWrite II version 1.0 and 1.1; Microsoft® Word version 3.0 and 4.0; WordPerfect version 1.00 through 1.0.4; WriteNow™ version 1.0, 2.0 and 2.2... or any other standard ASCII editor.

Simply analyze your document and RightWriter automatically creates a marked-up copy of the document — complete with inserted corrections and comments.

From your own familiar word processor, open the marked-up copy and review the suggestions. Make the changes you want, then let RightWriter remove all the extra corrections and comments.

What's left is a clean copy of grammatically correct, effective communication.

Over 4,500 Rules, Including:

Grammar Rules

- Noun-Verb Mismatch
- Sentence Fragment
- Run-On Sentence
- Misused Verb
- Misused Pronoun
- Misused Article
- Wrong Verb Form
- Misused Word
- Possessive Use
- Is This Correct?
- Repeated Word
- Capitalization

- Overused Phrases
- Single Word Quote
- Contraction

Usage Rules

- Colloquial & Slang
- Archaic
- Sexist
- Legalese
- Computer Terms
- Vague
- Wordy
- Redundant
- Questionable Word
- Not A Word
- Offensive
- Rephrase
- Modified Absolute
- Misleading Euphemism
- Negative
- User Flag

Style Rules

- Passive Voice
- Split Infinitive
- Long Sentence
- Sentence Length
- Difficult Sentence
- Use Verb Form
- Long Paragraph
- Start With But
- Conjunction Start
- Weak Sentence Start
- End With Preposition
- Negative Sentence
- Use Simpler Terms
- Use Simpler Word
- Consider Omitting
- Ambiguous Wording
- Cliche

Punctuation Rules

- Missing Question Mark
- Unnecessary Comma
- Missing Comma
- Misused Semicolon
- Misused Quotes
- Reversed Punctuation
- Unbalanced Quote
- Unbalanced Bracket
- Unbalanced Parenthesis

BONUS!

Strunk & White's The Elements of Style Electronic Edition

INCLUDED FREE WHEN YOU BUY RIGHTWRITER FOR THE MAC!

Reviewers have called it "...the best book of its kind" and raved, "The work remains unparalleled, direct, correct and delightful." Now *The Elements of Style* is available on diskette for your Mac.

Get RightWriter & Elements of Style **\$99.95 value \$59.95 value**

Both Just \$29.90!

RIGHTWRITER MAC 3.1

BAK3366 RightWriter Mac \$29.90
Requires 512K and any Macintosh computer, 800K 3 1/4" diskette drive, System 3.2 and Finder 5.3 or later.

Grammar Rules	
<input checked="" type="checkbox"/> Noun Verb Mismatch	<input checked="" type="checkbox"/> Wrong Verb Form
<input checked="" type="checkbox"/> Sentence Fragment	<input checked="" type="checkbox"/> Misused Word
<input checked="" type="checkbox"/> Run-On Sentence	<input checked="" type="checkbox"/> Possessive Use
<input checked="" type="checkbox"/> Misused Verb	<input checked="" type="checkbox"/> Is This Correct?
<input checked="" type="checkbox"/> Misused Pronoun	<input checked="" type="checkbox"/> Repeated Word
<input checked="" type="checkbox"/> Misused Article	<input checked="" type="checkbox"/> Capitalization

OK Save Changes Cancel

Turn on/off specific rules to suit your particular style.

Take Your Information With You!

REVIEWER'S NOTEBOOK: *Dynodex — The Real Contacts Database is an incredibly full-featured address book database manager. Includes both application and desk accessory versions. Allows you to print address books for virtually all popular-format personal organizers (including Filofax®, Franklin® Time/Design®, Day Runner® and the ever-popular Day-Timer®). You can also create custom designs and sizes for whatever purpose you can imagine. Dynodex's data entry screen is well organized, fast and gives you 22 fields (all user-renamable).*

Dynodex is a true personal organizer, capable of handling names, addresses, phone numbers, notes and all other important information — and allows you to print perfect double-sided address book pages that fit virtually any manufacturer's books.

You'll never lose your address book (that could be a disaster!), because you'll always have a backup right

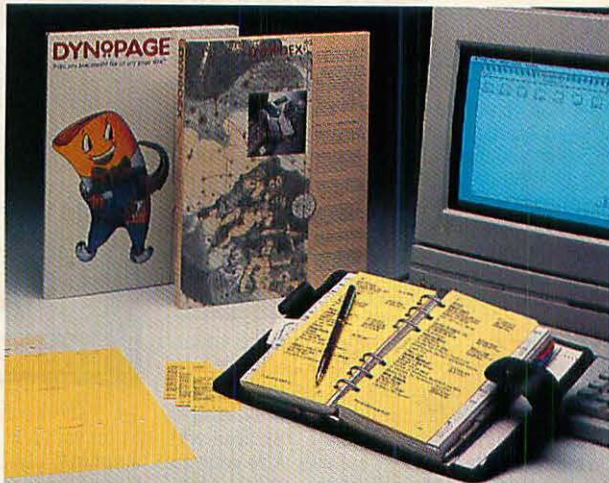
on your computer. Instantly look up and dial any number you need from the powerful Dynodex database — or the convenient desk accessory. Never waste another minute looking up a name or dialing a wrong number. Dynodex gets you the information you need fast.

The powerful Dynodex database delivers ultra high speed searches: instantly select subsets based on multi-level queries with a set of eight logical and arithmetic operators; for example, "all clients in California contacted within the last 6 months." On sorting: you get 3-key, ascending or descending on any field, along with Dynodex's speedy find, change and global delete. You can delete duplicates, Fast-Find and display any record instantly by simply clicking on it in the list window.

If your information resides elsewhere, Dynodex allows you to quickly import it for immediate use. Any text file, tab-delimited or comma-delimited file is ready to use, and Dynodex includes a free copy of DynoStack, for importing HyperCard, Focal Point and QuickDex address files.

On to Dynodex's powerful (and very smart) printing capabilities: You can print any size address page, even double-sided pages. Print in any font, size and style on a field-by-field basis for great looking pages. You can set Dynodex to break pages on a new letter of the alphabet or print continuous listings. Dynodex also prints beautiful pages on DynoPaper, specially designed micro-perfed paper available in a variety of colors and punched-hole configurations to

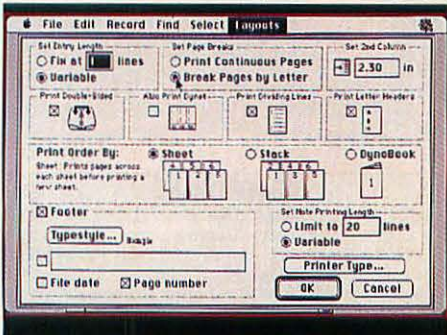
fit your favorite personal organizer. You can use Dynodex to print envelopes, postcards, Rolodex® cards, mailing labels and Post Net bar codes, too.



ALSO AVAILABLE: DynoPage and DynoPaper. DynoPage is the incredibly useful utility that actually allows you to preview and print ANY Macintosh file on any size page, single- or double-sided. Create a center-stapled booklet from any file, or print reports, maps, charts, spreadsheets or other documents to DynoPaper sheets that fit perfectly into your Day-Timer or other personal organizer.

PORTFOLIO SYSTEMS

BAK2440 Dynodex	\$72.00
BAK2441 DynoPage	\$72.00
BAK2442 DynoPaper	\$14.00
(white, cream, gray or yellow)	
Macintosh Plus, SE series, II series, or Portable; System 6.0.3 or later.	



The Industry's Only Continuous Hard Disk Backup.

REVIEWER'S NOTEBOOK: *Ordinary backup systems make periodic backups of your data to a tape or floppy, and that's fine; but DiskTwin offers you automatic, continuous backup protection (great for workgroup servers, transparent while AppleShare runs). That means up-to-the-minute data backups (from primary disk to secondary disk) without any effort at all. Just install DiskTwin and never worry about it again. Another important advantage: DiskTwin features Automatic Cutover, which keeps your Mac on-line during a system crash, seamlessly switching you to the second drive. DiskTwin has the ability to rebuild bad blocks at up to 85mb/minute. And with DiskTwin's parallel SCSI buses, you don't suffer any performance loss! DiskTwin was awarded an honorable mention as storage product of the year in the MacUser Eddy awards. It also received four-and-a-half mice in their November issue.*

You can avoid the most horrifying scenes with an ounce of prevention. It's called DiskTwin, and it could save your life in the event of... well, the unspeakable. Available either as a NuBus card or SE/30 version (and accompanying software), DiskTwin gives you a constantly updated backup, so there's no data loss between backups. It is automatic and completely transparent, so you'll never forget to use it. It is also AppleShare® compatible so it doesn't slow down your AppleShare users, and it preserves access privileges. And

since DiskTwin uses any standard Macintosh SCSI drive, there's no reformatting or need to update drivers. In short, DiskTwin is a simple, powerful backup system for the Mac.

The automatic cutover feature actually keeps your computer running — right through a disk failure — without any loss of data! DiskTwin simply moves you to the twin disk, you (and your workgroup) continue to work without interruption. The failed disk can be repaired or replaced at any time. The speedy restore function takes control of the recovery process in the event of a primary disk failure, rebuilding data with lightning speed. Once it restores the data and your disk is operational, DiskTwin returns to its continuous backup duties. All DiskTwin error messages can sent via e-mail.

On servers, DiskTwin is the great protector, keeping them on-line through even the most serious interruptions. DiskTwin's mail notification is ideal for unattended or "headless" servers. And DiskTwin doesn't require server shutdown to archive continuously or for archival backup. It's compatible with all file sharing, e-mail, database and other workgroup software.

DiskTwin Scenario — AppleShare/E-Mail Server. Acme Widgets uses an SE/30 AppleShare server with an 80mb internal hard disk for a customer database and QuickMail. How can Acme's network administrator protect her company from losing all of its customer records when a disk

crashes and eliminate downtime from a busy workday?

The DiskTwin Solution. Using DiskTwin with a removable cartridge drive, the administrator can keep both an archive of the entire 80mb server disk and an up-to-the-minute backup. Every evening, she removes the twin cartridge for safekeeping and replaces it with another. By exchanging cartridges daily, the administrator has both continuous server backup and an archive that's immediately usable, unlike a tape or floppy backup.

If Acme's server disk crashes, DiskTwin automatically cuts over and continues operation from the cartridge disk, preventing downtime and the loss of the day's work. Users continue working uninterrupted, unaffected by the disk crash. DiskTwin's QuickMail Notification sends an e-mail to the administrator and other designated users, warning them that a disk has failed. The crashed disk can be repaired or replaced at a convenient time.

Twinit. Twinit is the software only version of its illustrious bigger brother, DiskTwin. It provides the same fully automatic, continuous-backup abilities for individual users and compact servers. Since no hardware is required, it runs beautifully on all Mac versions. It also works with all SCSI disks, with no reformatting or disk driver replacement necessary. Twinit also allows

you to create archives, using removable cartridges or erasable optical disks. These archives are ready-to-use.

DiskMaker: New From The Makers Of DiskTwin. If you own a SCSI disk, why settle for the lightweight software that the manufacturer usually provides? DiskMaker is the universal SCSI disk formatter that works with any SCSI disk, so if you have different types of disks, you won't have to scramble to learn the different software. And DiskMaker lets you do more — much more. It features full System 7 support, with 32-bit addressing and virtual memory support.

"A godsend for network managers concerned about downtime."
MacWorld Magazine



GOLDEN TRIANGLE

BAK2430 DiskTwin	\$695.00
BAK2431 Twinit	\$105.00
BAK2432 DiskMaker	\$65.00
DiskTwin: Macintosh SE/30 or II series but Apple NuBus or PDS adapters required for IIx; System 6.0.4 or later; SCSI twin disk; no minimum memory requirement. Twinit and DiskMaker: Macintosh Portable, Plus, SE series, or II series; System 6.0.4 or later; SCSI twin disk (Twinit only); no minimum memory requirement.	

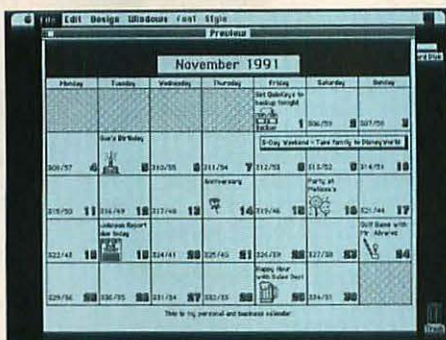
Complete E-Mail Solution for Mac, DOS and OS/2 Networks

REVIEWER'S NOTEBOOK: You can't beat this package for a total E-Mail problem-solver. Everything you need to send messages, voice recordings and more between Macs, DOS and OS/2 computers comes in this one box. This all-new version of the popular QuickMail is so feature-rich, it leaves the competition literally speechless. Plus there's 2 more great applications from the same company: an all-new version of the top-selling QuickKeys, and CalendarMaker. All superb tools for increasing productivity. Plus they're all System 7 compatible.

Whether you communicate across the hall or around the world, QuickMail has the features that make your communications clearer, faster and easier. With QuickMail, the days of missed messages, expensive overnight services and a desk filled with "While-You-Were-Out" slips are over. Also gone are the days of PCs and Macs coexisting — but not communicating. QuickMail connects users on AppleTalk, NetWare, Banyan, 3Com, LAN Manager and other PC networks without buying five different packages. Everything you need to get users communicating and exchanging files is included.

Macros Made Easy! Squeeze 10 keystrokes and mouse movements into a single click. Do backups to another computer in the middle of the night. Automatically check your mail every hour. All this and much more is yours with QuickKeys 2 — the leading time-saver for every Mac.

Since its release, QuickKeys 2 has been highly regarded by the press, user groups and Mac users everywhere. Now, QuickKeys 2.1 is here and it's Sys-



tem 7 savvy. For starters, QuickKeys 2 is like an autopilot for your Mac. Record anything you do and create a macro to play back later. Press a key. Click a button. Close a window. Open a document. Anything you can do on the keyboard or on the screen — recorded and saved in a macro. Then you play it all back with the touch of a single key. Think of all the repetitive tasks you do and you'll see how this can save you time and make you more productive.

CalendarMaker. Everybody uses calendars. We use them to remind ourselves and others of "who, what, why, where and when". Now there's an easy and effective way to have not only a full-featured calendar on your Mac, but also to print beautiful full-page calendars complete with artwork!

You'll work faster and be more organized with this handy calendar/scheduler right at your fingertips. Enter daily schedules and notes. Assign picture-

icons to specific days for visual reminders. Import schedules from other applications like SideKick and MORE. Create "floating notes" that cover several days (like 3-day weekends!). Everything to make calendars for years into the future.

FREE Bonus! IconMover lets you draw, capture or edit any icon. Use these icons in CalendarMaker for customized visual reminders. Includes 288 icons ready to use!



CE SOFTWARE

BAK2490A QuickMail (1-5 users)	\$265.00
BAK2490B QuickMail (1-10 users)	\$395.00
BAK2492 QuickKeys	\$95.00
BAK2491 CalendarMaker	\$39.95

QuickMail: Mac SE or better running System 6.0.5 or later. QuickKeys 2: Mac Plus or better running System 6.0.4 or later and hard disk. CalendarMaker: Mac 512E or better running system 4.2 or later.

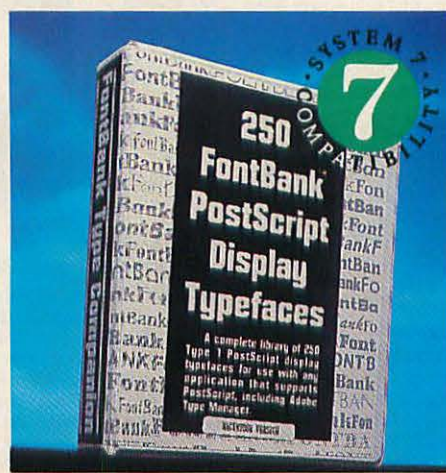
PostScript Fonts For Just 40 Cents Each?

REVIEWER'S NOTEBOOK: What's wrong here? Was that a typo in the headline or has TigerSoftware lost their minds? No typo. No mind loss. Just a great value on a complete (and we mean complete!) library of 250 Type 1 (the best) display faces for use with any application that supports PostScript (including ATM). You already know the value of great looking type in your documents. Now great type costs less. These faces can be used with more than 4,000 Macintosh applications and run beautifully with all Macs. Includes screen fonts as well as printer fonts. Why pay more for foundry-quality type?

Type 1 PostScript fonts — the best you can buy. Smooth and crisp on the screen and on the page. The standard for Macintosh and adopted by Microsoft for Windows. Buy them from Adobe and pay through the nose. Or, take advantage of FontBank's staggering array of quality fonts at down-to-earth prices. You'll create attention grabbing documents and eye stabbing graphic elements for any graphics programs and desktop publishers. With such a wide variety of faces available to you, creating incredible headlines is fast, fun and amazingly professional. The headline is the face of good advertisements. Wimpy headlines are usually ignored, while bold headlines attract the reader, and if your message is important, the casual reader becomes curious — and persuaded. Remember, though, that headlines must be legible. If you'd like to know more about working with display

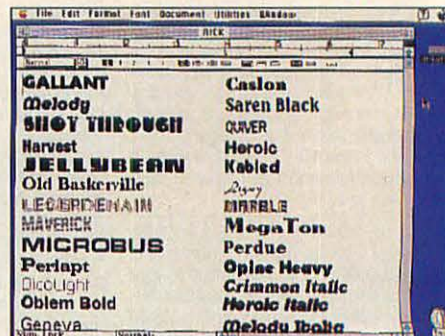
faces and creating winning headlines, call TigerSoftware and ask for a free copy of a 24-page book that we've prepared entitled "A Short Course On Working With Type." It has been prepared by the typographers at Tiger and we'd be happy to get one in the mail to you.

FontBank has assembled a vast array of looks and feels in their type library. 250 different faces, each with its own distinct character. Some you may never have seen before. And FontBank display faces can be easily manipulated with programs like TypeStyle, Adobe Illustrator, Aldus FreeHand and others. Combining FontBank's 250 faces with the capabilities of these programs offers the opportunity for an unlimited number of special effects. And FontBank display faces are compatible with all major page layout applications like Quark XPress, PageMaker, DesignStudio, Multi-Ad Creator and others.



Regardless of what the design assignment, from flyers, posters, ads, coupons and greeting cards, to presentations, notices, memos and packaging, FontBank display typefaces give you the typographic tools you need to look your creative best. And, when converted to editable outlines using FontMonger, these faces can be used to produce special text and design effects to create stunning documents.

How long have you been using those same tired typefaces? Chances are, you use what you have because finding the right typefaces, installing them, and learning to use them is more trouble than it's worth. So, you compromise the overall look of your document by compromising on the one critical factor: the type. That's why FontBank is such an exciting product, easy to install, a pleasure to use — and a low cost way to improve the quality of everything you print.



Just a sample of the FontBank library of pro-quality Type 1 typefaces. Each is smooth and clean on-screen — and on paper!

FONTBANK

BAK2425 FontBank	\$95.00
------------------	---------

Can be used with any Macintosh.

Easier Than PageMaker! New Publish-It! Easy 2.1...



REVIEWER'S NOTEBOOK: If you're about to enter the world of Macintosh desktop publishing, or if you're an experienced user who wants fast, pro-quality results without dredging through hundred-page manuals, Publish-It! Easy is the award-winning, System-7 Savvy product that you've been looking for. Called by MacWorld Magazine "... the Swiss Army Knife of desktop publishers," and awarded 4-and-a-half mice by MacUser, it's the only desktop publisher you'll ever need. Works with amazing swiftness on any Mac and makes eye-grabbing pages in a fraction of the time you'd spend with other products. Also available in the popular new Corporate Network File Server Version. Achieve great results in your first session. Includes 72 sample layouts and QuickStart manual for instant results.

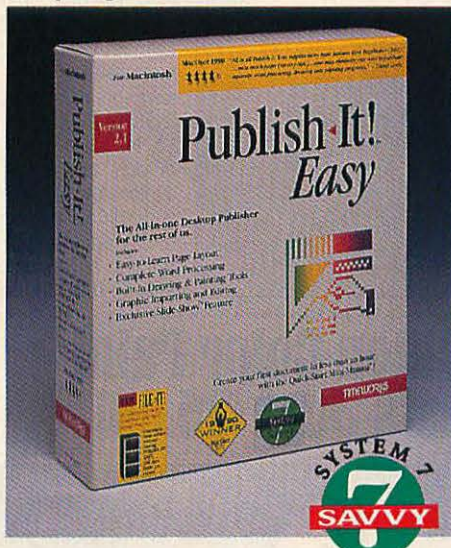
The printed page. It can be an adversary or a joy. If you've got new Publish-It! Easy loaded on your Mac, you'll enjoy the process of laying out a page — and produce handsome newsletters, brochures, catalogs, reports, bulletins, advertisements, flyers, coupons and more! With the toolbox of advanced, easy-to-use features such as The Slide Show (complete with dozens of features and effects, outperforming some stand alone packages!), instant thumbnails (view and edit up to 100 pages), built-in database and mail merge, spell checker and thesaurus, your ideas will look extraordinary on paper as well as on-screen. Draw, paint, edit text, add graphics instantly and use a host of other state-of-the-art publishing tools with sleek controls. In fact, this one program eliminates the need and expense of having separate drawing, painting, word processing mail merge and presentation software — that's how incredibly full featured this package is! And don't worry — Publish-It! Easy doesn't punish you for mistakes or experimentation — it provides 5 levels of Undo to get you right back to the beginning, so you can explore other creative avenues. Print your quality pages on any Chooser-selectable printer.

Unique "What-If" Features. And Publish-It! Easy's unique "What-If" design features makes new and exciting layouts come to life with "Libraries" and "Proxies" that take the mystery and legwork out of the design process. Change type styles or sizes and the text automatically reflows. Headlines instantly fit into the area they're supposed to and subheads tuck cleanly into proper position. Indents are done for you, page numbering and book binding margins are automatically added and more. Publish-It! Easy even handles vertical text justification, aligning text with the top, center or bottom — or any way you like it — with just a mouse click. You can quickly import text from your favorite word processor (including Microsoft Word/Works, WordPerfect, MacWrite I and II, WriteNow and others) — with all type styles and fonts intact! Touch up scanned images with extensive professional tools and import graphics from Adobe Illustrator, MacPaint, SuperPaint, Freehand, FullPaint or any other drawing or painting program with PICT, PICT2, EPS, TIFF or PAINT file formats!

Graphics From Scratch... You can also create your own graphics from scratch with 65 pen sizes, then paint them using an assortment of 32 brush sizes and an airbrush. For typographer-quality text effects, Publish-It! Easy allows you to mix typestyles, sizes and styles in any combination you like — even print grayscale or textured type to create an endless variety of unique effects. Of course, you get precise control of the kerning, leading, stretching, condensing and rotating of your type (in one-degree increments).

Pop in a graphic image, and Publish-It! Easy automatically wraps text around it.

Includes FREE File-It Database... File-It is an incredibly useful database and merge program built right in to Publish-It! Easy. Now you can integrate customized information (names, addresses, phone numbers, personal notes, even entire paragraphs) into form letters you create in Publish-It! Easy. It includes three sample databases, seven professionally designed templates and an assortment of mailing label formats, so all you have to do is drop in your data and create a form letter in seconds! Preview your information before you print and retain all of the desktop publishing features (stylized fonts, rotated type, mixed text and graphics) when you create your customized documents. A powerful database takes care of all the details for you, like math, logical "if-then" functions, multiple sort levels and more. A great accessory to Publish-It! Easy that you won't find in other packages.



Here's how easy it is!

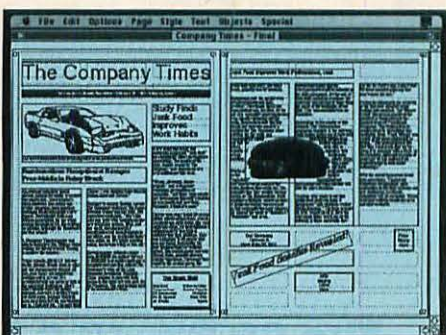
- **Extensive On-Line Help.** An extensive on-line help system guides you through every command, tool and object at the press of a key.
- **Libraries and Proxies.** Experiment with document design all you want. Easy's "Libraries" & Proxies let you alter page layout and type styles instantly — making changes and experimentation easier than ever before.
- **Multiple UNDO Levels.** Lets you UNDO a text mistake you made up to five steps back.
- **Find and Replace.** Instantly change any word or any font, font size or font style throughout your document in a single command.
- **Multiple Windows.** Open, arrange and work on as many documents and windows on your screen as memory permits.
- **Thumbnail Editing.** View and edit up to 100 pages at a time in thumbnail view. You can quickly move elements from one page to another.
- **Layout Aids.** On-screen, movable pica, metric and inch rulers, and a customized alignment grid help to layout your document.
- **Dynamic Time, Date & Page Number Stamps.** Automatically update as you modify your document.
- **Service Bureau Checklist.** Provides all the essential information for service bureaus, such as

font list, document size, file statistics, etc.

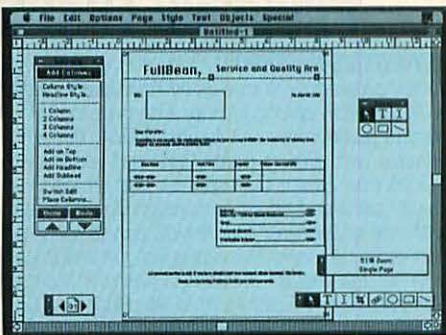
Here's how powerful it is!

- **Full-Featured Word Processing.** You can type, spell-check, and format your documents right from within Easy.
- **Dynamic Text Flow.** Watch your text automatically being reformatted as you change the size, shape or location of your text frames.
- **Converts Apple II Word Processor files and Graphic files.** For importing into Easy.
- **Slide Show™.** Create and prepare slides, hand-outs or on-screen presentations. Works in Auto-Repeat or Manual Mode — with your choice of 49 transitions (special effects between slides). Easy has all the tools you need to transform your documents into presentations.
- **Spot Color Separations.** Define up to six spot colors and apply them to your text or graphics. Then print them out as spot color separations.
- **Zoom Palettes.** Palettes drop out of sight to give you the maximum working area.

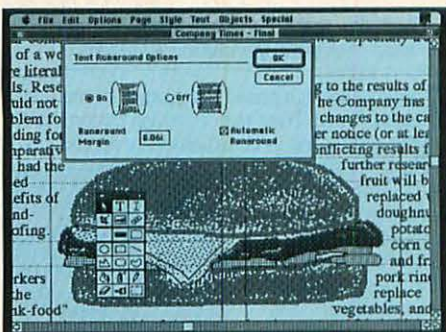
Also Available! Corporate Network Version!



Page layout fast and easy, with a palette of powerful tools. You can easily view double-page spreads.



Add columns and headlines with sleek menus.



Zoom in or out to adjust details.

TIMESWORKS

BAK2470 Publish-It! Easy \$135.95

Any Macintosh running System 6.0 or later with 1MB RAM.



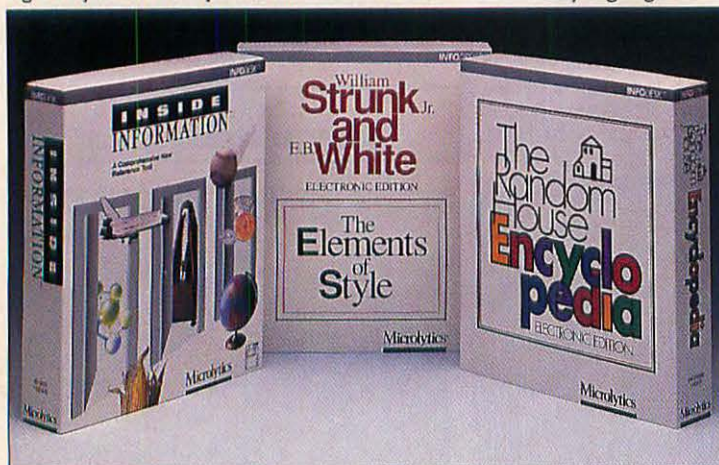
A World of Information on Your Desktop!

REVIEWER'S NOTEBOOK: The INFODESK series is an important milestone in reference software. Three classic works are now available for the Macintosh. Each contains a wealth of current information, arranged for easy location and accessed through the powerful INFODESK engine. You'll use these titles often. They're fun to just browse through!

Random House Encyclopedia. The best-selling encyclopedia that puts a full-blown reference center right on your Mac! Simple and fun to use — without

a CD-ROM player. Ideal for students, professionals, researchers, writers and makes a wonderful gift for anyone. Just click to explore History, Geography, Philosophy/Religion/Mythology, Social Sciences, the Arts, Science, Sports and Leisure, Law, Government and more.

Using the powerful, built-in search and retrieval tools, you can see a quick overview of Chinese history, the advent of computers, facts about Romanian agriculture or learn how a nuclear power plant works. Click on Sports and learn about Ty Cobb, Hank Aaron and the immortal Babe Ruth. Click on Science and travel back to July 20, 1969 and Neil Armstrong's historic moon walk. Click on Arts and Music and Instruments to travel through the careers of Elvis, the Beatles and others. Click on Government and explore the lives of George Washington, Thomas Jefferson, JFK and others. It's fast, easy and fun — ready to go right out of the box.



Inside Information. This new Desk Accessory is a comprehensive reference tool which organizes the English language into logical Categories of defined words. Far more than a dictionary or thesaurus, INSIDE INFORMATION lets you quickly and easily explore any of seven general Classes: Nature, Science & Technology, Domestic Life, Institutions,

Arts & Entertainment, Language, and The Human Condition. These Classes contain 20 Subclasses, 125 Categories, and 700 Subcategories.

Categories are defined by subject matter, such as Chemistry, Law or Music — or by a common property, such as Colors, Tools, Verbs of Motion — or even a specific usage, like Insults, Slurs & Epithets.

Dig deeper into each Class in three different ways: outline view, graphic view or tree view. The reverse dictionary lets you type a few descriptive words, then see a listing of appropriate terms and definitions.

Strunk & White's Elements of Style. Reviewers have called it "...the best of its kind" and raved, "The work remains unparalleled, direct, correct and delightful!" Now **The Elements of Style** is available for your Apple Macintosh or IBM PC compatible computer.

Based on an original work by William Strunk, Jr., a Professor of English at Cornell University, this updated third edition, prepared by noted writer and grammarian E.B. White, has become a classic of conciseness. It's the ideal tool to make your writing crisp, succinct and powerfully effective.

Anyone who needs to communicate effectively in writing will find *The Elements of Style* packed with specific, pertinent examples to improve writing style and structure. It's an easy-to-access educational reference work for the rules and principles of correct English usage. Includes seven rules of usage, eleven principles of composition, several matters of form, a list of often misused words and a style guide.

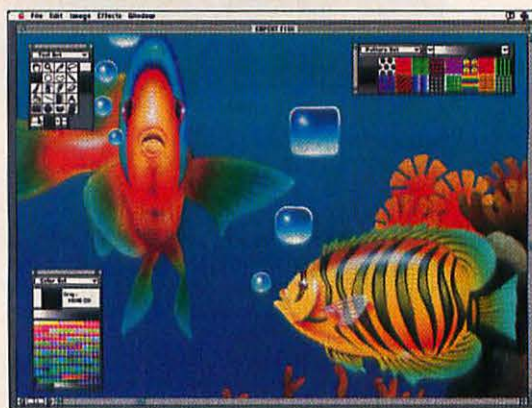
RANDOM HOUSE

BAK2350 Random House Encyclopedia Mac	\$65.00
BAK2000 Inside Information Mac	\$65.00
BAK2600 Elements of Style Mac	\$59.00

The 32-Bit, 16.8 Million-Color Paint Program That Costs Just \$35.00!

REVIEWER'S NOTEBOOK: It's hard to imagine that a paint program with true 32-bit color and a palette of 16.8 million colors, plus an extensive toolbox of creative features can sell for just \$35.00. But a few minutes with Expert Color Paint and you'll know that it's true. Expert Color Paint brings professional-quality paint and photo preparation down to earth with one of the most feature-rich, easy-to-use products we've ever seen. This one is fast, fun and loaded with all the extras—including System 7 support. Compare Expert Color Paint to MacPaint (at \$125), UltraPaint (at \$199) and SuperPaint 3.0 (\$199). Feature for feature, you simply can't beat this low-cost, high performance art attack! Throw in a free disk packed with quality clip art (a \$24.95 value) and it's the most irresistible offer we've ever made!

Frankly, the high-priced paint products are a little embarrassed. They've been telling customers that a paint system has to be expensive to be good. And while that may have been true in the past, the wall has come down. Expert Color Paint is a powerful, yet simple-to-use product that produces great looking images, just like the pricey packages, and adds a studio-full of advanced tool-box features, such as



lasso and magic wand, gradient tools, dropper, air brush, paint can, a host of patterns and more.

For image editing, there's blur and sharpen, distort, skew, brightness filters, contrast control, image scaling, paint dithering, antialiasing (smoothing), rotate, flip, stretch and slant. There's even a life-saving "multiple undo" feature. You can customize your tools, retouch photos for pro-quality results and create extraordinary gray scale images in no time.

Those other paint programs told us that paint programs should be difficult to use — but that's not true anymore, either. In fact, working with Expert Color Paint's sleek menus and streamlined tools gives you complete control — without the learning curve. Retouching photos is fast and easy. Expert Color Paint is like having a darkroom right on your Mac, with a

host of creative options at your fingertips, more than some full-blown photo-manipulation programs! And incorporating special effects is a snap.

When you're done, save your pictures in one of several popular formats, or easily publish them to other System 7 programs. And Expert Color Paint will use virtual memory, so massive color files (with as many colors as you want) are never a problem.

Although Expert Color Paint is bursting with riveting color, it's also a pro-quality tool for creating impressive black and white images as well. And when you're ready to print, Expert Color Paint provides vast support for ImageWriters, StyleWriters and LaserWriters — even Linotronic and AGFA Compugraphic printers. Sorry, SuperPaint, MacCheese, UltraPaint and MacPaint, Expert Color Paint is more — for less!

✓ Expert Color Paint is a simple yet powerful color paint program with many extras including 32-bit color and image editing.

✓ The fully loaded tool palette includes adjustable Brushes, Magic Wands, Air Brush, Paint Can, Patterns, Text and more.

✓ Includes professional editing features like Blur, Sharpen, Brightness, Contrast, Rotate, Stretch, Slant, Anti-aliasing and Dithering.

✓ Support for QuickDraw and PostScript printers.

✓ Extra Bonus! Clip Art Disk, a \$24.95 value included FREE!

EXPERT COLOR PAINT

BAK2505 Color Paint	\$35.00
<small>Requires Macintosh SE/30, LC, Macintosh II, IIx, IIcx, Classic II, PowerBook 140, PowerBook 170, and Quadra families (68020 processor or above) with 2 MB RAM and a hard disk; System 6.0.5 or later and 32-bit QuickDraw; 8-bit video card recommended.</small>	

Want To Learn A Foreign Language?

REVIEWER'S NOTEBOOK: Learn Spanish, French, German, Japanese, Italian, Chinese or Russian with the foremost language tutoring system in the world: Hyperglot. If you've ever studied a language before (and want a fast, easy way to refresh), need to learn a new language for travel or business, or even if you've never attempted a second language, this series combines the power of your Mac with the most extensive materials available. Digitized voices of native speakers provide pronunciation lessons while grammar, vocabulary and phrases are at your fingertips. Hyperglot also offers the industry's most respected Japanese language software.

Business today is setting its sights on global expansion as European and Asian markets explode. Communication is a critical aspect of success in these new territories. With Hyperglot's series of foreign language software, you can learn to speak and understand languages of the important countries of the world with less effort and almost instantaneous results. If you're a traveler or student, exploring a new language is fast and fun with Hyperglot's digitized speech and logical progression.

Pronunciation Tutor (Available for Spanish, French, German, and Chinese): The Pronunciation Tutor is packed with over 2 megabytes of high-quality, digitized sounds, consonants, words, phrases and full sentences. Just click on the syllables, words and sentences; a native speaker repeats them as many times as you need. The Pronunciation Tutor includes an extensive set of notes throughout the stacks — a great aid to understanding as you move through the lessons to expand what you're seeing on the screen.



Just click at any time for more information, clarifications and examples. Unusual sounds, pronunciations and inflections are explained with easy-to-understand notes and digitized sounds are available at any time. And of course, translations are available with a mouse click.

Verb Tutor (Available for Spanish, French, German, and Russian): Hyperglot's series of Verb Tutors include extensive verb drills that provide a thorough understanding of these languages as spoken. 200 sentences, recorded by native speakers, drill you on 20 frequently used verbs. Check conjugations of all tenses of the verb being drilled, see an instant translation, get a quick briefing of the rules for tense usage, check your answers and see a complete explanation. Ideal as a first- or second-year course in any of the featured languages. Also great as a review or meaningful refresher course.

Word Torture (Available for Spanish, French, German, Russian and Italian): A complete, automated vocabulary drill with up to 1600 words and their translations. You can type the answers to questions

posed by the system or use the speedy flash card format for drills. Word Torture will automatically re-test you on missed answers and you can create drills of any size you like for self-paced learning. Drill from Spanish, French, German, Italian, or Russian to English or vice versa. (Incidentally, these products are excellent as an aid to English as a second language.) Create your own drills, see the words in random order and create your own customized vocabulary sets.

HYPERGLOT LANGUAGE SOFTWARE

BAK2480S Spanish Pronunciation Tutor	\$35.00
BAK2481S Spanish Verb Tutor	\$39.00
BAK2482S Spanish Word Torture	\$35.00
BAK2480F French Pronunciation Tutor	\$35.00
BAK2481F French Verb Tutor	\$39.00
BAK2482F French Word Torture	\$35.00
BAK2480G German Pronunciation Tutor	\$35.00
BAK2481G German Verb Tutor	\$39.00
BAK2482G German Word Torture	\$35.00
BAK2483A Japanese: KanjiMaster	\$99.00
BAK2483B Japanese: EasyKana	\$69.95
BAK2482I Italian Word Torture	\$35.00
BAK2484 Russian: Introduction	\$39.95
BAK2484R Russian Word Torture	\$35.00

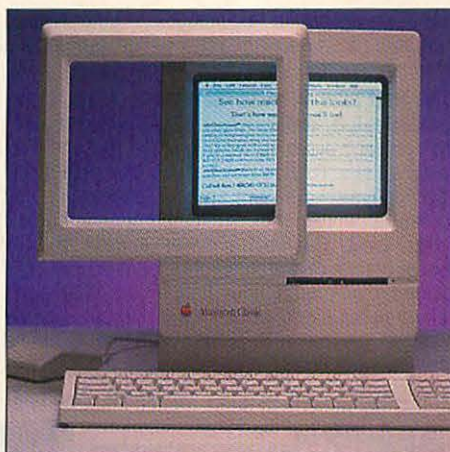
Memory requirements vary. Call for details.
Other language teaching aids available.

Screen Glare Is Inconvenient ... And Harmful.

REVIEWER'S NOTEBOOK: The problems related to screen glare go far beyond mere inconvenience. They can affect your performance and enjoyment when using your Mac. They can also cause serious visual problems. The OCLI line of high quality glare guard and anti-glare filters fight eyestrain and block damaging electric field radiation. Many state agencies and municipalities now require such filters on every computer they own. These filters also provide optically correct display, eliminate static, reduce screen "flicker," increase comfort and fit all Mac models, while eliminating up to 99% of offensive glare and harmful ELF/VLF-E-field emissions. Along with establishing good lighting conditions, adding a high quality OCLI filter to your display is the most important addition you can make to your system.

You've been there. Three o'clock brings a wicked stripe of light through your office window, blazing squarely across your computer screen. So you rubberneck around your monitor, in useless attempts to see through this hideous glare. Or you swing your computer around, contorting yourself to see as you work.

If you think that there's no connection between those glaring moments and the eyestrain, headaches and blurry vision you experience afterwards, you're wrong. The fact is, glare has a serious and damaging effect on your vision. Studies have proven this in exhaustive testing in recent years. These problems produce a domino-effect on your performance, and can



lead to health problems over prolonged exposure.

Only OCLI Glare/Guard Profile Plus filters, with patented HEA technology provide definitive protection against these potential hazards. Why not use mesh screen or diffusing light filters? You could, but they are far less effective than OCLI's optically coated filters. Mesh screens use a fine mesh to limit the amount of light reflected from the face of the display, causing fuzziness and distracting patterns that reduce image clarity. Diffusing filters have a chemically etched glass or plastic surface that scatters reflected light. They greatly reduce the sharpness of screen images. Only OCLI's coated filters eliminate glare while improving sharpness of image quality.

Ten of the leading mesh, polarizing and coated anti-glare filters were compared for visual effectiveness by researchers at Virginia Polytechnic Institute and State University at Blacksburg, Virginia. The study conclusively determined that the Glare/Guard

optically coated filter provided the best readability of all models tested.

Then there's the issue of monitor emissions, perhaps the most serious of considerations. Only Glare/Guard filters are made of tempered glass, which is virtually unbreakable. Tempered glass is five times stronger than regular (annealed) glass, and two-and-a-half times stronger than safety glass (laminated). If you and your children use a Mac at home, you need the superior protection of the OCLI Profile Plus filter.

What about static? Did you know that static electricity causes an invisible static charge, harmful dust buildup and damaging equipment surges that can ultimately lead to data error or loss? Static charge also has been proven to cause skin rashes. That's why OCLI Glare/Guard Profile Plus filters are grounded, eliminating the menace of static electricity. OCLI HEA (high efficiency antireflection) coatings used on these quality Glare/Guard filters have been adopted for use by NASA on Shuttle orbiters, reducing glare on spacecraft cabin windows, instrumentation panels and computer displays. They're also in use on camera lenses, microscopes, scientific instrumentation and a host of other optical devices that require precisely controlled light.

Many products are labeled as anti-glare filters, but in fact, performance levels vary greatly. OCLI Glare/Guard filters are designed and manufactured to uncompromising quality standards by OCLI (Optical Coating Laboratory, Inc.) — the recognized leader worldwide in the design, development and manufacture of thin film optically coated products.

OCLI GLARE/GUARD FILTERS

BAK2445A Macintosh 9" line	\$65.95
BAK2445B Macintosh 12" (LC)	\$75.95
BAK2445C Macintosh 13" (RGB)	\$75.95
BAK2446 Apple Portrait	\$75.95

The 4,000 Year-Old Game Of Abstract Reasoning.

REVIEWER'S NOTEBOOK: While most of today's popular computer games feature eight-headed dragons, impenetrable Soviet tanks or playful green cosmic blobs, Go is a simplistic Japanese tradition that challenges the mind on the most basic level. It, indeed, mirrors the logic, philosophy and personality of the player, stirring the inner self and demanding intense concentration. Fascinating and addictive, you'll learn to play in minutes and spend the rest of your life mastering it.

Here's how you play Go: Two opponents alternately place black or white stones on the vacant intersections of a 19 by 19 grid-board, attempting to surround empty points and thwarting one another. The player with the most enclosed intersections wins.

Unlike chess, which requires superior technical mastery to defeat an opponent, Go requires players to combine vision and logic. And while both games demand a strategy, decisive attacks and a solid defense, Go allows weaker players to compete evenly with a unique hand-



icapping system.

An interesting characteristic of Go is that the entire board may not look the same as it did on any previous turn. Since you add stones during each turn, there are only rare instances where the board could look the same. And unlike chess, which ends in a draw if the board repeats often enough, Go requires that you do not repeat.

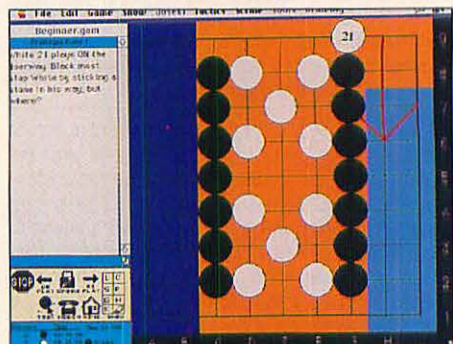
Most Go games have three distinct phases: The opening, in which players establish the areas of the board that they hope to control; the midgame, where players strengthen and extend territories, while attacking the opponent (most games are won in this phase); and the endgame, where players fill neutral points and solidify their positions.

Timing and planning are critical. Players must judge when to create complete boundaries for the territories they've captured or risk being attacked at any time. When to reinforce a territory and when to attack (or defend an attack) is a matter of precise timing. Defending a position too soon will hurt your efforts to expand, while a late defense will allow an opponent to destroy your position with little or no loss. Your strategy will dictate whether to begin your conquest at the corners, on the sides or within the center of the board (HINT: the 3rd and 4th lines from the edge represent the most efficient play).

Once you begin playing Go, you'll understand the intellectual challenge that underlies the simple appearance. It's much deeper than any game you've ever played and much more rewarding than pulverizing a fleet of visitors from another planet!

Go Master Deluxe. Take your Go experience to the limit with the ultimate level of play. Go Master assists your planning with battle maps revealing stones and groups needing defense, territorial control for each player, or even 10 recommended plays. Go Master Deluxe includes Nemesis Joseki Genius and Neme-

sis Tactical Wizard, two grand master tutors that guide you to the peak in Go skills. Joseki gives you sequences of moves culled from centuries of play by the masters. By learning strategies of organized moves, and using joseki techniques in your play (it aids both players equally), you'll quickly develop skills that will make you a dangerous opponent. Includes on-line introduction on the joseki theory. Nemesis Tactical Wizard is your advisor as you play, consulting you on what to do in life-and-death confrontations with the enemy. Also includes Nemesis Scribbler, the documentation utility for your Go matches. Complete annotation capabilities for the serious Go student and advancing player.



The ancient Japanese game of Go: Two opponents place their stones on vacant intersections of a 19x19 grid, attempting to surround empty points and thwart one another. This game requires strong strategy and intense concentration. Available as just the game or Go Master Plus, complete with tutorial, time-tested strategies, and a host of sample sequences.

NEMESIS GO MASTER

BAK2406 Go Master \$35.95
BAK2405 Go Master Deluxe \$71.95
Requires 512K RAM; 800K floppy drive; System 6.0.2 or later.

The Ultimate Defense Against Intruders!

REVIEWER'S NOTEBOOK: If you've ever had your computer invaded, your data compromised or your equipment damaged by an unauthorized user, you understand the need for total system security. While passwords provide an inconvenience to unauthorized use, only Kensington's hardware and software concept of system defense delivers total protection to even the most determined offender. Available for Mac Classic, IIc, IIcx, IIfx, II, IIfx, IIsi and SE/SE 30 models. No other system we've ever seen comes close, and if you're serious about your data, you won't settle for anything less.

Consider the value of the data contained on your computer. It could easily be one of your most important assets. Now consider the vulnerability of that data if you don't establish a strict line of defense against unauthorized use of your machine. The results of accidental or intentional damage could throw you into instant crisis. That's why Kensington has developed the only three-tiered defense against such system invasions. It's called PassProof. This hardware and software protection package is far more secure than simple passwords, and unlike dangerous encryption schemes that manipulate data, no information is ever altered in any way. PassProof, while

making your system impenetrable to unauthorized use, stays nicely out of the way when it's time for you to work.

The First Line Defense—Hardware. A heavy-duty disk drive lock features a high quality round key lock that prevents downloading of sensitive files and computer viruses. This first defense lock is attractively designed to match the color and style of your Mac, but stands up to even violent attempts at unauthorized entry. Next, PassProof provides durable security plates, constructed of solid metal, with tamper-proof screws that protect your floppy and SCSI ports. These plates block unauthorized start-up using peripheral devices such as external and CD-ROM drives.

The Second Line Defense—Software. PassProof's

The Third Line Defense—Screen-Locking. PassProof's QuickCover automatically blanks your screen after a specific time. To reactivate the screen, just type your password and you're ready to continue working. You can also quickly set up QuickCover to act as a screen saver only, without requiring a password for reactivation. PassProof also gives you a record of user log-in, with a complete list of all attempts to access your system in addition to a record of other system activities.

The PassProof Components. Everything you need is in the box. Comes with PassProof software disk, one PassProof lock, two keys — with serial tag on a key ring, one floppy port plate, one SCSI port plate, one Mac II case screw, four tamper-proof screws, one custom screwdriver, and a user manual.



easy-to-use software installs in seconds, provides multi-level password protection, and allows for multiple users with unique passwords. Users may be added or deleted at any time, but only the master can authorize the addition or deletion of a password and thereby, a user. The master has complete control of the system.

KENSLINGTON SECURITY PRODUCTS

BAK2423A PassProof for Mac SE, SE/30, Mac II-RH Drive \$69.00
BAK2423B PassProof for Mac IIc, IIcx, IIfx, Mac II-LH Drive \$69.00
BAK2423C PassProof for Mac Classic \$69.00
BAK2423D PassProof for Mac IIsi \$69.00
Requires hard drive and System 6.0 or greater.

Compress Files And Folders Up To 98%!

REVIEWER'S NOTEBOOK: *Stuffit Deluxe 2.0 is the latest utility from the mind of famed programmer Raymond Lau, and is already an industry standard in compression and archiving. Many national (CompuServe and GEnie) bulletin board files are "Stuffed" and can be accessed through Stuffit Deluxe. It's faster, easier and more competent than any other compression utility we've tested, and includes a slew of state-of-the-art features: a new intelligent compression option, the ability to create self-UnStuffing archives and automatic launching of compressed application or documents. You'll save some serious disk space, while giving yourself complete file manipulation control, the ability to open multiple windows, move, copy, sort, rename and delete archived files — even add password security! By compressing files, you also save modem transfer time. Put the Magic Menu Extension in your System Folder and watch a new menu appear in the Finder. Now Stuff and UnStuff files and folders from within the Finder. There's even built-in virus protection.*

If you're not using a compression utility, you're leaving valuable disk space on the table. And if you're not using Stuffit Deluxe, you may be missing out on a wide range of helpful tools.

Stuffit Deluxe features a new QuickStuff command that brings up a dialog box — you simply choose the file or folder you want to stuff. Stuffit Deluxe then instantly creates an archive and stuffs your files. QuickUnStuff is just as easy — just select the

files and it's done! There's also a Control Panel file — Magic Menu — that places a menu called Magic in the Finder. Just select the files or folders you want stuffed — right from your desktop, and without opening Stuffit Deluxe! Incidentally, Microsoft Mail and QuickMail users can stuff and send their E-mail files without actually using the E-mail software.

If you're like most users, you'll adopt Stuffit Deluxe as your main backup program. The extensive, Finder-like operation allows you to actually open multiple archives and move files between them. And only Stuffit Deluxe provides an easy-to-use scripting language to automate your archival procedure.

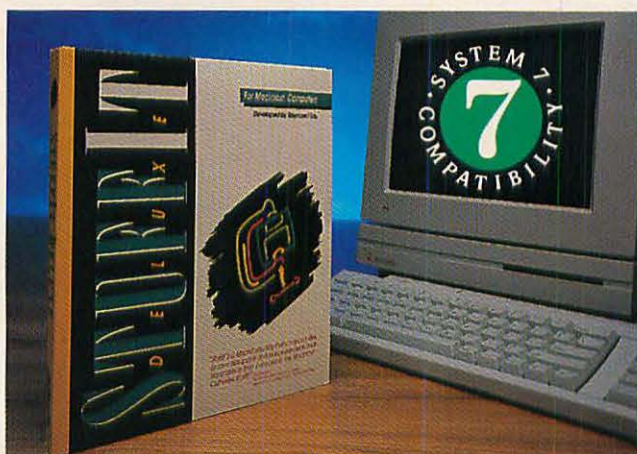
Also From Raymond Lau... New SHORTCUT.

How would you like to put all of the files and folders that you use all the time onto one menu? Now you can — quickly and simply with new SHORTCUT, the ingenious disk management and file/folder navigation utility that appears within every application.

Using SHORTCUT means that you'll never have to conduct all-out searches for files or folders again — just a mouse click finds whatever you need. By placing a pop-up menu in each application's directory dialog box (a.k.a. Open and Save dialogs), SHORTCUT instantly gives you the ability to "Fast Find" lost files and jump between files and folders. And if you're a Stuffit Deluxe user, SHORTCUT gives you transparent access to Stuffit Deluxe archives. These compressed archives appear as regular folders on your disk. Just

double click on a file in an archive and it's instantly decompressed and ready to go!

SHORTCUT is straight forward, simple and powerful. You can create new folders without using the Finder, rename, delete and lock files and folders, quickly see vital information on files, view text and PICT documents from within any application (even if the application doesn't support them!), and more. The powerful Find command allows you to perform searches with blistering speed by just typing any part of the document name or folder name. You can even customize SHORTCUT to your own needs in just seconds from the Control Panel.



STUFFIT and SHORTCUT

BAK2420 Stuffit Deluxe 2.0 \$62.00
BAK2421 SHORTCUT \$45.00
Any Macintosh computer with a hard drive running System 6.0.2 or later with at least 1MB RAM.

The Intelligent Desktop

REVIEWER'S NOTEBOOK: *Although OnCueII contains several individual features (each of which could be standalone products), one in particular caught our eye as an incredible time saver: KeyLauncher. It allows you to launch any application from the keyboard, without opening layers of folders — by simply typing all or part of its name! That one capability can save an incredible amount of time by eliminating time-consuming steps. It's worth the price of OnCueII alone — but there's much more...*

OnCueII satisfies the power-user in us as elegantly as it satisfies our need for easy-to-use utilities that perform as promised and increase productivity. So it's great for anyone. In seconds, you can personalize your menu configuration for maximum speed and efficiency. Just click to open an application, group documents together that will be used for a specific project, return to work on a recently-used document by retrieving a list of up to 100 files you've used, and launching any of them immediately. No other file and application manager gives you this degree of functionality. There's even a cure for the "missing application" message using OnCueII's unique Match-Maker feature. With it, you can launch files that have

missing applications by assigning another application — any one you choose!

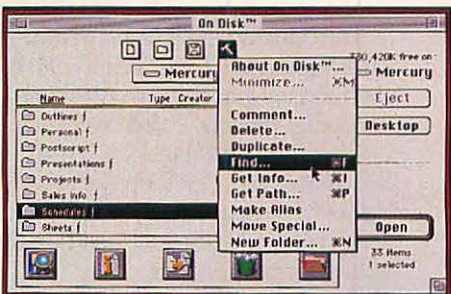
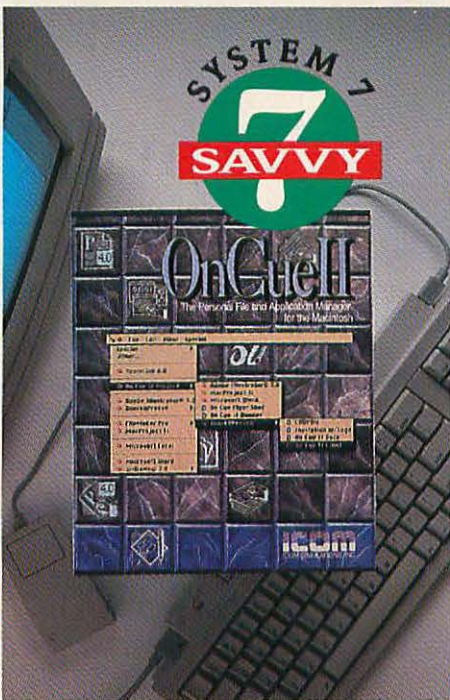
OnCueII also provides powerful, easy-to-use tools to help you instantly find seemingly lost files. You can conduct blistering fast

searches by file name, file format (TIFF, PICT, etc.), creator application, dates created or modified, file size or any combination. With this powerful search feature on your side, you'll never misplace another file. Guaranteed. And with OnCueII's amazing file

management capabilities, you'll be able to instantly find, get info, copy, move, delete, and rename files/folders from within any application — and without using the Finder. It doesn't get any more convenient than that.

And there's more! The On Startup feature gives you complete control of the programs that load when you turn on your Mac, like system extensions and control panels. You simply define the priority and groupings and OnCueII takes care of the rest.

All of which makes OnCueII one of the most important new products to come along in years, giving you capabilities you've probably wished for but never thought possible. And we've just scratched the surface of OnCueII's vast potential: it contains ten other time-saving features that users have screamed for. It's one product that does it all.



Instant file management — from within any application!
Find, get info, copy, move, delete, even rename files or folders without using the finder!

ONCUE II

BAK2400 OnCueII \$55.00
Any Macintosh computer running System 6.0.2 or later with at least 1MB RAM.

TI made PostScript® printing affordable.



Now we've made it fast.

Introducing the TI microLaser™ Turbo printers: They race through sophisticated graphics software faster than other printers.  POSTSCRIPT

How do they do it? A RISC-based 8220 board with PostScript software from Adobe® processes information from your computer quicker. So you spend less time waiting for graphic output.

Swift and still affordable, the personal 9ppm microLaser Turbo retails for \$2,349* — a savings of more than \$2,000 on the Apple LaserWriter® II NTX.

The 16ppm XL Turbo goes for \$3,749* and is ideal for an AppleTalk® network. Both feature PostScript Level 2 with 35 scalable fonts. Two of the smallest footprints you'll find. And superior paper handling that includes a 250-sheet paper drawer that slides *inside* the printer.

Dial the number below for the name of your nearest TI dealer. And take a Turbo out for a spin.



1-800-527-3500.


**TEXAS
INSTRUMENTS**

*Suggested retail price — dealer prices may vary. microLaser is a trademark of Texas Instruments Incorporated. Adobe, PostScript and the PostScript logo are registered trademarks of Adobe Systems, Inc. Apple, LaserWriter and AppleTalk are registered trademarks of Apple Computer, Inc.

Circle 313 on reader service card

MACWORLD

THIS MONTH:

New PowerBook Products

DOS Nets for Macs

3.5-inch Removable Drives

Adobe's Document-Publishing Plans

BY DAN LITTMAN AND TOM MORAN



STEVEN BARATZ

THE \$3999 PERSONAL COLOR-POINT THERMAL-TRANSFER PRINTER FROM SEIKO.

Seiko Ships Personal ColorPoint Printer

Seiko Instruments USA has introduced a color thermal-transfer printer that produces a letter-size page at 300 dpi in less than 2 minutes. Called the Personal ColorPoint, the printer accepts paper up to B4 size (8.53 by 11.93 inches). It comes with 1MB of RAM, expandable to 4MB.

Personal ColorPoint lists for \$3999 for the printer only. To work with Macintoshes, it requires a \$599 MacPac adapter kit, which comprises a NuBus adapter board, Color Quick-Draw printer driver, and True-Type fonts. The printer is compatible with IBM PCs and can be adapted to work with Unix workstations. Seiko, 408/922-5800.—T.M.

TREND

New Drivers

An alternative is finally emerging to the dismal formatting and disk-management software that ships with most hard drives. FWB and Optima Technology, which make mass storage devices, have both recently unbundled and begun selling their software; and newcomer Casa Blanca Works is selling Drive7, which is optimized for System 7. Optima's \$495 DiskMount provides such high-end features as mirroring two drives and recovering crashed drives. Optima also plans to unbundle its tape drive software. FWB's \$199.95 Hard Disk Toolkit is a set of seven applications and utilities that allow users to test performance and to edit low-level SCSI parameters that are normally inaccessible. Casa Blanca Works' \$59.95 Drive7 is a low-priced, easy-to-use package that provides partitioning for Macintosh Operating System and A/UX volumes and lets you change your hard drives' icons. Casa Blanca Works, 415/461-2227; Optima Technology, 714/476-0515; FWB, 415/474-8055.—D.L.



PETER HOEY

operators can write add-ons; several add-ons are already in development, including a news wire-service interface and links to SII and Atex mainframe-based publishing systems.

Price depends on configuration. Quark, 303/934-2211.—D.L.

Chokes and Traps

A San Francisco-based desktop publishing consulting firm has produced an animated introductory tutorial on choking and trapping—processes that compensate for the misregistration of different colors of ink that can occur when printing. The tutorial takes apart a poster with an image of the Mona Lisa to briefly explain choking and trapping for spot color and process colors, type, and photographs. \$19 for individuals; bulk orders with a customized logo are available. Pixel Ink Consultants, 415/564-0962.—D.L.

Quark's Publishing System

QUARK IS DEVELOPING A multiuser editorial system for tracking stories through all stages of writing and editing, as well as managing production.

The system will have two components: QuarkDispatch, a database server that Quark is developing in-house; and QuarkCopyDesk, an application

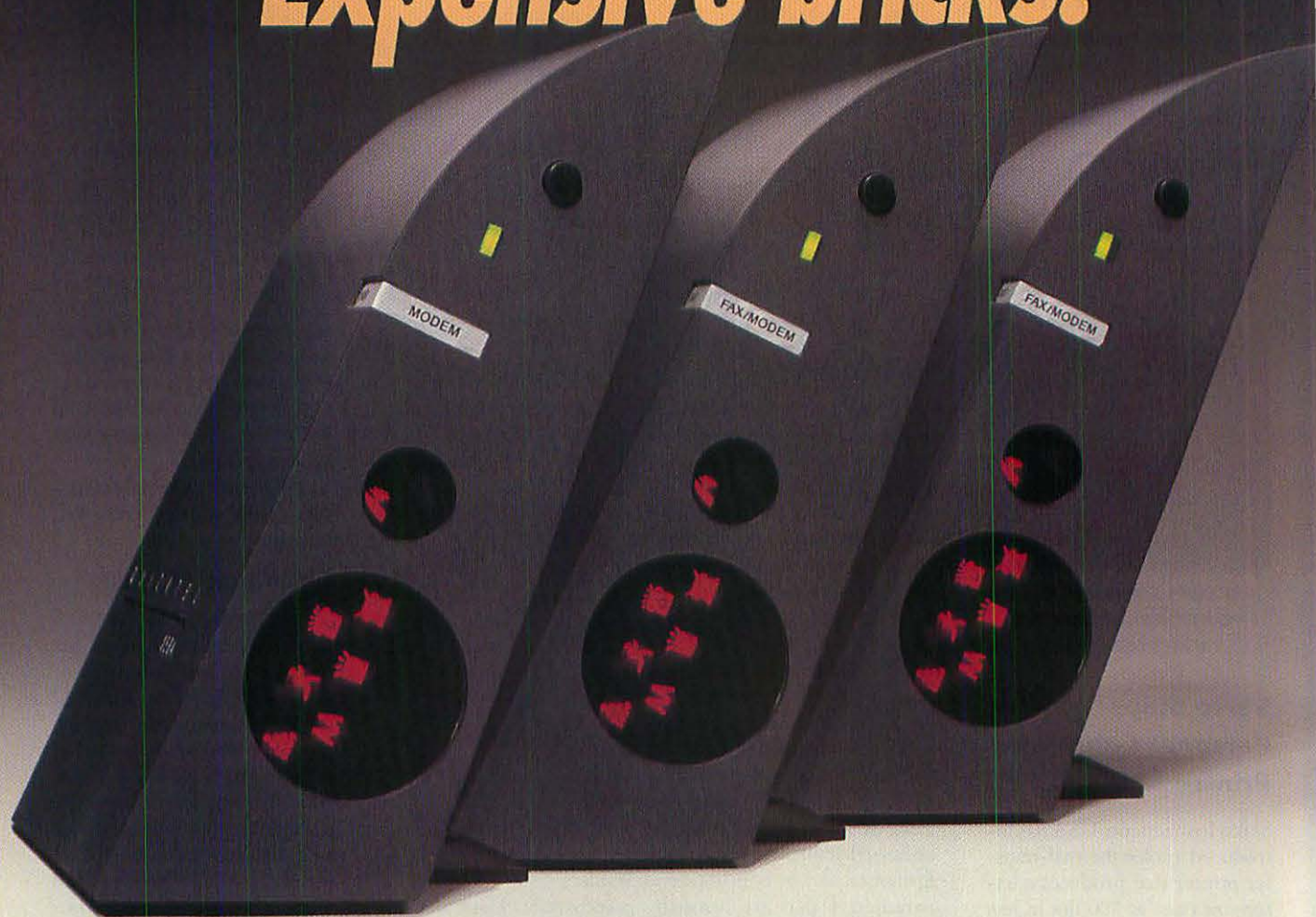
that helps editors assign and track stories. QuarkCopyDesk includes a word processor module for writers, and QuarkXPress users logged into QuarkDispatch can perform design and production.

QuarkDispatch has a programmable interface like QuarkXPress so that third-party devel-



MONA LISA'S ABUTTING COLORS WILL NEED TRAPPING OR CHOKING

Xebas make the other modems look like bricks. Expensive bricks.



Xeba marches on. Now there's a Xeba for every need—2400 to 9600 to 14.4K.

2400 bps Modem

A great basic modem. All the style of Xeba, complete with cables, software and power supply. Plus, you get Logicode's exclusive upgrade protection (call for details). ~~Retail \$149~~

\$109

96/96 bps Fax/Modem

Save on connect time and toll charges with modem speed of 9600 bps up to 38.4K with V.42 bis. Also incorporates 9600 bps send/receive fax and all cables and software. ~~Retail \$499~~

\$249

V.32 bis Fax/Modem

Make short work of large files with speeds from 14.4K bps all the way to 57.6K bps when connected to a similar modem. 14.4K send/receive fax capability, software and cable. ~~Retail \$599~~

\$349

QUICKTEL™

Call direct (800) 735-6442

Quicktel modems from Logicode Technology, Inc., 1817 DeHavilland Drive, Newbury Park, CA 91320 (805)499-4443 Fax: (805)499-8588
©1991 Logicode. Trademarks are property of their respective owners. Dealer/distributor inquiries invited

Circle 93 on reader service card

DVI Multimedia Board

New Video Corporation has begun shipping its EyeQ Development Platform, a combination of software and several boards designed for creating multimedia applications in Intel's DVI format. Once created, the applications can run on any DVI-compatible system, whether PC, Mac, or other. EyeQ supports video

capture and display at 30 frames per second, audio, compression, and special effects. The created applications, also compatible with QuickTime, can be presentations, kiosk displays, interactive training, image databases, and so on.

The EyeQ Development Platform lists for \$14,500 including the EyeQ Delivery Board and Capture Adapter hardware, MacDVI Content Developer Software, and Mac-

DVI Application Developer Toolkit. The EyeQ Delivery Board and Capture Adapter with MacDVI Content Developer Software lists for \$7500. New Video also offers an integrated system with a IIci, at \$22,500. All configurations include MacroMind Director 3.0 through January. New Video, 310/396-4000.—T.M.

New Products for the PowerBooks

WITH THE PUBLIC CLAMORING for PowerBooks, vendors are vying to bring out products to make the notebook Macs more useful. The most interesting of these is a series of internal—yes, internal—graphics adapters that support external monitors. The tiny internal boards are from Envisio, a new company that has figured out several ingenious solutions to the problems of getting an adapter to fit into the PowerBooks' memory slots. The boards take charge of the memory map at start-up, so they can force the video map to be in a memory location where it can always be found. The products:

- The Notebook Display Adaptor supports a monochrome 13-inch, 15-inch, 19-inch, or 21-inch monitor, or any VGA monitor on the PowerBook 100. The board, which can also hold the usual RAM, lists for \$695 with 1MB of RAM, and \$895 with 2MB.

- The Notebook Display Adaptor 030 supports the same monitors and provides color on 13-inch color monitors. The Adaptor 030 works with the PowerBook 140 and 170 and accepts Apple memory SIMMs. Without RAM the Adaptor 030 lists for \$795, with 1MB it's \$1195, and with 2MB it goes for \$1595. The Envisio adapters are shipping now. Envisio, 612/339-1008.

- The PowerModem from Pinnacle Sales International sends and receives data at 2400 bps, sends faxes at 9600 bps, and receives faxes at 4800 bps. It comes with PSI's fax-modem software and is available now at a list price of \$299. PSI is also offering a series of RAM upgrades for the PowerBooks. PSI, 408/559-8544.

- The Pocket Fax Modem from Solecetek, an external device for the PowerBooks and other Macs, weighs 3½ ounces. It sends and receives faxes and data at the same rates as the PowerModem and comes with powerful software for sending faxes from within any application. The Pocket Fax Modem lists for \$349.95 and is available now. Solecetek, 619/450-1220.

- The EN/SC 10T, an external SCSI-to-Ethernet adapter from Asante Technologies, connects the PowerBooks, or any Mac, to 10BaseT Ethernet. Slated to ship in November, the EN/SC 10T lists for \$399. Asante, 408/752-8388.

- The LiteDrive PowerBook series from CMS Enhancements includes the LDPB 40 and LDPB 80, 40MB and 80MB internal hard drives, respectively. The drives have average access times of 15ms and come with utilities. The LDPB 40's suggested retail price is \$699, and the LDPB 80's is \$999. Both were scheduled for November availability. CMS, 714/222-6000.—T.M.



CLOCKWISE FROM UPPER LEFT: CMS 80MB HARD DRIVE, ASANTE ETHERNET ADAPTER, PSI MODEM, AND SOLECTEK FAX MODEM.

JOHN WILLIAM LUND

TREND

Macs Join DOS Nets

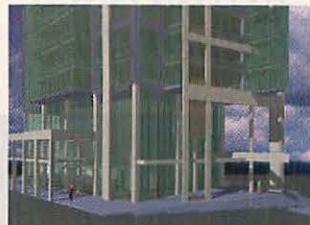
TWO BIG PLAYERS in the DOS networking arena have recently announced Macintosh clients. Banyan's Vines version 5.0 includes AppleTalk support, making it possible for Mac users to join DOS, Windows, and OS/2 clients connected to a Vines server. Vines Option for Macintosh provides Macs with all Vines services, including file sharing, print management, and security. Banyan also has a Mac E-mail client. Price depends on configuration.

Microsoft LAN Manager 2.1 has an add-on, developed with Pacer, called Services for Macintosh. It provides print management, file server, and backup capabilities on LocalTalk, token ring, and Ethernet. Banyan, 508/898-1000; Microsoft, 206/882-8080.—D.L.

Redesigned CAD

Three long-standing Macintosh CAD packages have come in for major upgrades recently. Computervision's VersaCAD

News



A SKYSCRAPER CREATED WITH ARCHICAD 4.0. THE FLOW OF MACINTOSH CAD SOFTWARE IS ENDLESS.

4.0 adds a dozen major features; drops the price to \$1995; and includes the architectural, drawing manager, and mechanical tools that previously were sold separately. Ashlar's \$1995 Ashlar Vellum 2.1 adds ordinate dimensioning, the ability to select parts of overlapping objects, and animation of mechanisms. A \$2495 version of Vellum retains the 2-D version's interface and adds 3-D modeling tools. Graphisoft's Hungarian import ArchiCAD version 4.0 adds fly-through ability; 24-bit color support with smooth-shading, shadow-casting, and anti-aliasing; and multilayer walls. It lists for \$4450. An upcoming version of ArchiCAD will include some tools from Graphisoft's TopCAD for architectural detailing. Ashlar, 408/746-1800; Computervision, 617/275-1800; Graphisoft, 415/737-8665.—D.L.

JUST FOR FUN

Colorful Bugs for Your Floppies

A new company called Bugy's has created a new way to get bugs—on lizards, fish, flowers, snakes, crabs, or sharks—onto your floppy disks. The product is a set of 60 preprinted four-color disk labels, each with a different natural image on it—and the idea is to have fun and make it easier to find that elusive disk. "Hmm, let's see, I think the Dullmeister spreadsheets were on the disk with the cockroach label..." The 60-label set goes for \$34.95; an introductory special offers 180 labels for a mere \$83.88. Hey, fun is definitely not cheap. Bugy's, 415/332-9577.—T.M.



SCOTT PETERSON

A FEW OF THE IMAGES ON BUGY'S COLORFUL LABELS FOR FLOPPY DISKS.

CD Technology Presents...

America's Favorite...



\$795*

"Editors choice" — MacUser
 "Product of the year" — MicroTimes
 "Excellent choice" — PC Magazine
 "Best buy" — MACWORLD

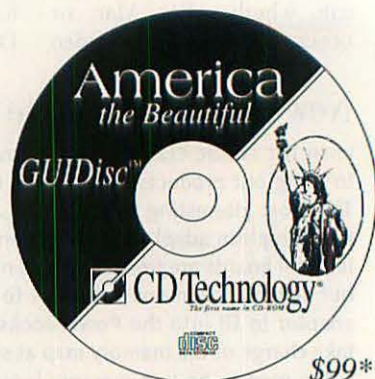
America's First...



\$99*

First multimedia handbook-on-disc
 First commercial QuickTime™ CD
 First QuickScreen™ window recorder

America the Beautiful...



\$99*

Beautiful guidebook-on-disc
 Beautiful landmark & scenery
 Beautiful country...

Multimedia action... exploration and excitement.

CD Technology - the multimedia tools company - brings it all together for your enjoyment and enrichment.

Our award-winning **CD Porta-Drive®** is the most reliable, dependable and compatible multimedia CD-ROM drive available. No wonder CD Porta-Drive gets the highest ratings from *more than ten* major computer publications. Not to mention recommendations from **Microsoft, Lotus, Adobe, and MacroMind•Paracomp.**

For a limited time**, you will receive both the Multimedia HANDisc and America the Beautiful GUIDisc **FREE** when you purchase a CD Porta-Drive.

Introducing the **Multimedia HANDisc™**...
 The first of its kind multimedia handbook-on-disc.

Multimedia is *the way* to present information. But you can't just read about multimedia, you have to experience it! - with the Multimedia HANDisc.

This information-packed CD-ROM includes multimedia tutorials, demos, and huge libraries of animations, sounds, photos, backgrounds—everything you will need to learn how to create and run your own multimedia presentation. There is even a template to create a multimedia invitation to your own first show! All for only \$99!

Our **America the Beautiful GUIDisc™** is a collection of over one hundred high quality scenic color photos for enjoyable viewing. All images are royalty-free and can be viewed like a book; one at a time; or as a self-running slideshow. This is a wonderful disc for desktop publishing or multimedia presentations.

To learn more about our HANDisc and GUIDisc series and how CD Technology can help you market your CD-ROM, call us at (408) 752-8500.



* Suggested retail price
 ** Offer ends March 31, 1992

See us at Macworld Expo
 Brooks Hall Booth #5507



CD Technology®
 The first name in CD-ROM

CD Caddy available
 with 5 year guarantee!

Circle 102 on reader service card

Multimedia Merger

MEDIA GIANT TIME WARNER AND interactive entertainment developer Electronic Arts announced recently that they are teaming up to form a new firm, SMSG, that will focus on interactive multimedia. The initials "don't really stand for anything" and may change, says Trip Hawkins, chairman of Electronic Arts and president and CEO of the new venture. At this point, the firm's exact mission remains as mysterious as its name, but it certainly will take advantage of Electronic Arts' technical skill and Time Warner's vast content holdings. Hawkins wouldn't comment on whether SMSG will primarily develop titles or technology, noting only that "we're interested in markets as diverse as CD ROM and cable."—Joe Matazzoni



ERIK ADIGARD/M.A.D.

Apple Outlines Its Open Collaboration Environment

Apple has disclosed plans to create what it calls the Open Collaboration Environment (OCE), a suite of developer tools, interfaces, servers, and communications formats designed to provide dramatic new capabilities in electronic messaging, enterprise-wide directory management, security, document sharing, and related areas. OCE, when it appears, will be a set of extensions and enhancements to System 7. The environment will provide, among other things, common end-user interfaces for applications from developers already lining up in the OCE camp. The main features of OCE will include:

- Developer tools and programmatic interfaces for messaging, privacy and security, and directory management.
- An open-system architecture that will be designed to accommodate various present and future methods of sending messages and data and managing directories.
- The Open Messaging Interface (OMI), which is already being created jointly by Apple and Lotus Development, will provide compatible mail formats and messaging services between a wide variety of different computer architectures.

OCE will also address problems of incompatible data types and physical separation between senders and recipients. The general architectural design of OCE has been under development for more than two years, with the help of input from a large number of outside developers, according to Apple. The company said it would announce specific features of intended products in January 1992.—T.M.

Adobe's New View

ADOBE SYSTEMS IS WORKING on new technology for distributing documents and viewing them on screen. Old-timers who recall Solutions' SuperGlue will recognize the idea, but unlike SuperGlue's Macintosh-specific QuickDraw, Adobe is using the universal PostScript, so that Macintoshes, PCs running DOS or Windows, and Next machines can exchange documents.

A print driver creates a document by saving it in a special PostScript dialect, and a viewer utility opens and navigates the document. A special Multiple Master font is automatically substituted for missing fonts to preserve leading, column widths, and so on.

Adobe says it will deliver this technology "as an end-user product" sometime in 1992. Pricing was not decided at press time.—D.L.

Apple Board Uses IBM Token-Ring Technology

Apple's Token Ring 4/16 NB Card is Apple's first product to include technology licensed under its recent strategic alliance with Big Blue. The Token-Ring protocol allows for communication among personal computers, minicomputers, and mainframes in a network environment where many different computer architectures coexist.

The Token Ring 4/16 NB board is a NuBus bus master that transfers data at either 4MB per second or 16MB per second, depending on the speed of the Token-Ring network.



BETA WAIT

Long-awaited products

Acius's 4D Server

Shown publicly January 1991. Current ship date projected: spring 1992 in France, three months later in United States.

Farallon's DiskPaper

Shown publicly September 1990. Still in development, no ship date projected.

FoxGraph/Mac

Shown publicly August 1989. In development, no ship date projected.

FoxPro/Mac

Discussed publicly winter 1990/91. Fox says will go to beta soon, no ship date projected.

Interleaf 5

Discussed publicly October 1990. Current ship date projected: summer 1992.

Clarix's MacWrite Pro

Announced spring 1991. Current ship date projected: late spring 1992.

Picture Publisher Plus

Discussed publicly January 1991. Project canceled when Astral Development was acquired by Micrografix.

QuarkXPress 3.1

Announced April 1991. Planned to ship summer 1991; current ship date projected: end of 1991.

News

Apple is discontinuing its 4MB per second TokenTalk NB Card. Contact your Apple dealer.—T.M.

High-Speed Optical Drive

Sumo Systems has unveiled a high-speed rewritable optical drive, called the SS630, with an average access time as low as 37ms and a transfer rate of up to 1MB per second. The 600MB optical drive uses a read-write method that reduces the weight of the movable head, resulting in the faster access time.

The Sumo SS630 uses ISO-compatible 5¼-inch optical cartridges, has a high-speed SCSI-2 interface, and lists for \$4295. It is available now. Sumo Systems, 408/453-5744.—T.M.



THE SS630 OPTICAL DRIVE FROM SUMO SYSTEMS HAS A 37MS AVERAGE ACCESS TIME.

Impulse 040 Accelerator

Impulse Technology Sales has introduced the Performance/040, a general-purpose accelerator board based on the 68040 processor. The accelerator provides speeds up to twice as fast as the Mac IIfx and roughly the same as the Quadras.

The Performance/040 is compatible with System 7 and with Mode32 memory-management software for address-continues

MASS

Media



DataPak™ Removables More Storage, More Choices

Macintosh storage solutions from MASS Microsystems™. That's what MASS Media means. And our DataPak removables give you more storage and more choices than ever before.

Selection Choose a DataPak model to meet your individual needs. With footprints to match your Macintosh, DataPak 45 and 88 drives provide hard disk performance. Or choose our DataPak MO optical drive with 512 megabytes per cartridge. Whether you're archiving large files or need network backup, DataPak MO gives you the most cost-effective optical storage available.

*Now available for Quadra 900:
DataPak 45i and 88i Internal Drives*

Infinite Storage With DataPaks you never run out of storage. Each removable cartridge packs up to 45 or 88 megabytes of hard disk storage, or 512 megabytes of rewritable optical storage. Need more? Just buy another cartridge.

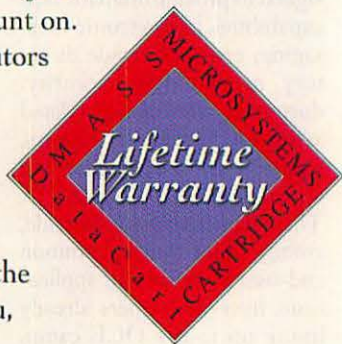
Security & Backup The compact removable cartridges are ideal for securing your data. Take them with you or lock them up. And DataPak doubles as the ideal backup system.

Circle 207 on reader service card

The MASS Microsystems Edge

With more industry awards for removable storage, and as the first Macintosh-only public corporation, MASS Microsystems is one company you can count on. With dealers and distributors worldwide, up to 2-year warranties, next-day repair, and toll-free technical support, we're there when you need us. For a free demo disk, or the name of a dealer near you, call toll-free

800-522-7979.



MASS
microsystems
The first name in storage

810 W. Maude Avenue Sunnyvale, California, 94086
408-522-1200 Fax: 408-733-5499

Macintosh is a registered trademark of Apple Computer, Inc.
DataPak and MASS Microsystems are trademarks of Mass Microsystems, Inc.

DP-MW01

See us at Macworld Expo
Booth # 1139
Moscone Center



SyQuest



BUG REPORT

America Online 1.0 On Macs running System 7.0 with Zapf Dingbats installed, all text appears in Zapf Dingbats. Free patch available online; to download go from Departments to Computing and Software to Software Libraries, then use QuickFinder to search for "Zapf Dingbats."

Excel 3.0 Incompatible with Mac Quadra. Microsoft is shipping free bug-fix, version 3.0a, to registered users who request it.

PageMaker Table Editor 1.0 Hairlines don't print correctly on imagesetter. Aldus will fix in major upgrade to PageMaker; date and pricing not set.

QuickMail 2.5 Remote doesn't transfer messages. 2.5a available free upon request, but sources disagree about whether it solves the problem. Also, System 7.0's File Sharing is incompatible with QuickMail; CE Software says System 7.0.1 does not solve this problem.

Taste 1.0 Frequent crashes. DeltaPoint plans to ship free bug-fix, version 1.02a or 1.03, to all registered users.

MACWORLD WILL SEND YOU A BUG REPORT T-SHIRT IF YOU ARE THE FIRST PERSON TO INFORM US OF A SERIOUS, REPRODUCIBLE BUG THAT WE REPORT IN THIS COLUMN. SEE HOW TO CONTACT MACWORLD.

ing lots of RAM. The board's eight SIMM sockets can contain up to 128MB of 80ns or faster RAM SIMMs.

The company expected to begin shipping the Performance/040 in November for \$2495 direct. Impulse, 404/889-8305.—T.M.

A View from Inside

A new imaging application can read data collected by three-dimensional scanning devices (such as CT scanners, magnetic resonance imagers, confocal microscopes, and some X-ray devices) and display the data as *voxels*—a term derived from *volume* and *pixel*.

VoxelView enables a user to visualize the inside of an object without invading or destroying the object. For example, using data collected by a CT scan, a cardiologist can look inside the heart; move about the image; and adjust colors, opacity, and contrast for clarity. Or an engineer could use data collected by an X-ray machine to study welds in a pipeline. VoxelView costs \$4000 and requires System 7 running in 32-bit mode. Vital Images, 515/472-7726.—D.L.



RADIOLOGIST PHIL KOBLIK USES VOXELVIEW TO STUDY CT SCANS ON A MAC II FX WITH 32MB OF RAM.

The Gorilla's Voice

"VOICE" SAID KOKO in sign language, when asked what she'd like for her birthday. She had been at Stanford University where she'd grown accustomed to using a voice synthesizer, and leaving it behind was traumatic for her. Being a gorilla, Koko needs a voice synthesizer to vocalize English.

To fulfill Koko's wish, Dr. Ronald Cohn and Dr. Penny Patterson at the Gorilla Foundation along with engineers at Apple's Vivarium program designed special hardware and software so she could speak by

tapping icons on a Mac II installed in her trailer.

Now Koko has a new yearning: for motherhood. But when researchers ask her how she likes Michael, the male gorilla she grew up with, she signs the word *toilet*, so her teachers designed a new form of computer dating—showing her on-screen pictures of eligible male gorillas to see which she falls for.—Ann Garrison

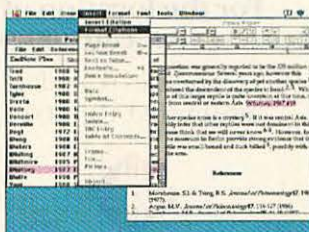


THE POWER TO BE HER BEST? KOKO HAMMERS OUT A SENTENCE ON HER GORILLA-FRIENDLY MACINTOSH.

The Basic Word

Microsoft Word 5.0 will have an open architecture with user-installable modules including a grammar checker; an equation editor; and WordBasic, a BASIC-like macro/programming language.

WordBasic will execute all Word commands, provide tools for creating menus and dialog boxes, and make it possible for WordBasic programmers to give Word new functions. Word 5 also has a programming interface so it can be integrated with external programs. For example, Niles & Associates is developing a version of its EndNote Plus bibliography software that runs inside Word.



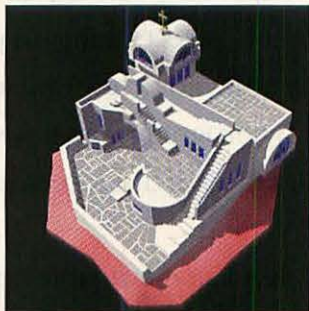
ENDNOTE COMMANDS APPEARING IN MICROSOFT WORD 5.0'S MENUS.

News

Microsoft will ship Word-Basic free to Word owners about six months after Word 5 ships. Word 5.0 will list for \$495. Microsoft, 206/882-8080; Niles & Associates, 510/655-6666.—D.L.

Reformation

THE SOLID-MODELING package Form Z will be upgraded to version 2.0. The upgrade adds hierarchical grouping for moving objects in parent-child relationships or changing objects' attributes; unlimited layers; and the ability to create and save unlimited reference planes anywhere in 3-D space. Holes drilled through solids like windows and doors can be moved or batch-duplicated. Form Z provides terrain modeling with contour maps of rectangle or triangle mesh, and the program can convert any object or surface to mesh and reshape it vertex by vertex.



A FANTASTICAL FORM Z MODEL THAT USES VERSION 2.0'S ROUNDED-EDGES AND LAND-FORM FEATURES.

Post-2.0 plans include walk-through support; motion constraints for creating hinges, cams, and other complex relationships; a reusable transcript of all commands and modifications; and reformation, that is, dynamic metamorphosis of objects. Form Z has a list price of \$999. Autodesk, 614/488-9777.—D.L.

2400 BPS DATA MODEM BUYERS: LOOK FOR THE SENDFAX™ SEAL.



If you've decided to buy a data modem to tap into information services and free bulletin boards, or move data between computers, be sure to look for the Sendfax seal on the package. With Sendfax, you'll get everything you want in a data modem, plus a *big* bonus. You'll be able to send faxes directly from your personal computer.

No more need to print hard copy first. No more trudging to the fax machine, waiting in line, or standing there feeding in paper.

If you only send faxes now and then, the silver Sendfax seal means you'll get all the advantages of instant, direct faxing on your data modem at little or no extra cost. If you're a frequent faxer, go for the gold. For a few dollars more, it's so fast (9600 bps) it can pay for itself the first few times you use it. By programming faxes to go at night rates, you'll save 40% or more on your phone bill. If you send a lot of long distance faxes, that adds up fast. And since modems don't wear out, it will add up for a long time.

Sendfax is available on the best quality data modems through your local computer retailer or direct mail marketer.

**For the location of the Sendfax dealer
nearest you, call 800-338-7554, extension 501**

Dealer inquiries regarding the Sierra Sendfax program
are invited. Call 800-338-7554, extension 801



SIERRA SEMICONDUCTOR

2075 North Capitol Avenue, San Jose, California 95132

20MB

Removable
Drives

TWO COMPANIES have recently begun shipping disk drives with removable media that store 20MB.

Liberty Systems will offer a drive based on Insite Peripherals' Floptical drive, which uses a hybrid of optical and floppy disk technology. The Liberty Series 50 Floptical drive uses removable 3.5-inch media and has



TOP: THE LIBERTY SERIES 50 FLOPTICAL.

BOTTOM: THE QUADRAM QUADFLEXTRA.

two read-write heads, one for optical media and one for floppy disks. One of the optical disks can store about 21MB formatted, so a Floptical-type drive can potentially replace a hard drive and a floppy disk drive. The Liberty Systems drive lists for \$799. The drive has a 65ms average access time. The 1.75-pound drive is available by direct order only, and is shipped about a week after receipt of the order. Floptical disks for the drive cost \$29.

The QuadFlextra from Quadram is based on a 3.5-inch drive mechanism from Brier Technology. The QuadFlextra uses totally magnetic media with high storage density, has an average access time of 76ms, and weighs 3.5 pounds. The unit can read Flextra disks only. The drive lists for \$895 including four 20.4MB disks. A ten-pack of disks lists for \$250. Liberty, 408/983-1127; Quadram, 404/923-6666.—T.M.

Ethernet Board
for HP Printers

Extended Systems' EtherFlex is an Ethernet board that fits inside Hewlett-Packard laser printers and lets users choose at installation whether they want to run Apple's EtherTalk protocol or Novell NetWare 386 for IBM PCs and compatibles. To run EtherTalk, which is much faster than AppleTalk, the printer must have HP's optional PostScript cartridge. The EtherFlex board can work in the LaserJet Series II, IID, III, and IIID printers.

Extended Systems designed the EtherFlex board with a removable protocol module; planned future modules will support other networks. EtherFlex is currently shipping at a suggested list price of \$695. Extended Systems, 406/587-7575.—T.M.

New Unix

VERSION 3.0 OF A/UX, Apple's Unix implementation, is scheduled to ship in early 1992. The new version is compatible with System 7 and the Macintosh



Quadras, has a one-button installer similar to the System 7 installer, and includes X Window managers. Pricing was not set at press time. In the United States call 800/538-9696 to locate a dealer.

Apple recently described long-term plans for A/UX, saying that the Apple-IBM agreements will not lead to replacing A/UX with IBM's AIX implementation of Unix, a scenario that caused many A/UX fans to shudder. Both Apple's and IBM's versions will eventually be able to run Macintosh applications on the IBM-designed RISC platform that Apple plans to bring to market in two or three years.—D.L.

News

Taking It
to the Streets

Strategic Mapping publishes the venerable MapMaker, a thematic map-drawing package that displays data by shading regions or displaying symbols on maps of states and countries (see "Every Pixel on the Planet," *Macworld*, January 1992). Strategic is about to ship the much more powerful Atlas Pro.

Atlas Pro differs from MapMaker in major ways. It



STREETS OF SAN FRANCISCO: ATLAS PRO CAN LOCATE AND SELECT SITES BY THEIR STREET ADDRESS.

DESKTOP LIBRARIAN

Beginning Mac Books

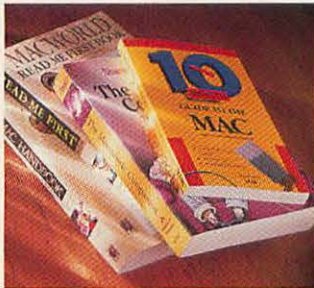
This month we look at books written for newcomers to the Mac.

- *The 10 Minute Guide to the Mac*, by Stephen R. Poland (1991, \$9.95). This slim volume takes a practical step-by-step approach starting with the basics and moving on to the more advanced Font/DA Mover and System 7. Tightly organized. Sams, 317/571-3489.

- *The Macintosh Companion: The Basics and Beyond*, by Sharon Zardetto Aker (1991, \$22.95). At nearly 600 pages, this chatty book is for beginners who are using System 7. Most of the chapters start with the basics of a topic and move on to more advanced information. Addison-Wesley, 617/944-3700.

- *Macworld Read Me First Book*, edited by Macworld editor-in-chief Jerry Borrell (1991, \$22.95). Organized into chapters on how to choose and use different peripherals and the most common types of software, such as word processors, page-layout programs, and utilities. IDG Books Worldwide, 415/358-1250.

- *Macworld Complete Mac Handbook*, by Macworld contributing editor Jim Heid (1991, \$26.95). Starts with advice on buying a Mac, moves on to the basics, then covers just about every hardware and software topic from common applications to networking, viruses, CAD, and upgrades. IDG Books Worldwide, 415/358-1250.—T.M.



FOUR BOOKS FOR THE BEGINNING MACINTOSH USER.

maintains an internal database and provides spreadsheetlike tools for manipulating and analyzing database information before displaying it on a map. Atlas Pro can create bar and pie charts; it provides a full set of tools for analyzing geographic data; and most significant of all, it can display street maps and analyze street-level data. Atlas Pro also has a much better interface than MapMaker and eliminates digging through layers of dialog boxes. Atlas Pro has a list price of \$795. Strategic Mapping, 408/985-7400.—D.L.

Relisys Monitor
Works with Macs
and PCs

The Model RE-1422 from Relisys is a 14-inch multi-scanning VGA monitor that continues

Use your IQ to write your fax,

Vanna's Dressing Room - - Created: Friday, December 6, 1991 11:41 AM - Page 1 of 1

V A N N A

To: Pat
From: Vanna
Date: 12/6/91
Re: The Show

Dear Pat,

I needed to tell you how enraged I was when Merv said that turning more than two letters at a time is a challenge for me. When he told me that I can't turn letters and chew gum at the same time, I had to retard, "Oh shut! What in the sand hill is he doing to my carrier?"
Pat, be honest with me. Do you think my job is in jeopardy?

Since early,
Vanna

not to send it.



Only PSI offers a complete family of fax modems that are all as easy to use as point and click. It's just as easy as printing. So you can fax without thinking about it—and stay focused on the task at hand.

With PSI's complete family, it's easy to find a solution that fits you. Like high-speed data and fax modems, network fax modems, and even internal fax/data modems for the new Macintosh Powerbooks. All with the same, easy to use software.

And if you want the best reliability, ask an astronaut what they use. NASA just sent a PSI fax modem into orbit with the shuttle. So if you want the best fax modems in and out of this world, call PSI at 1-800-622-1722. And spend your energy creating faxes—not sending them.



See us at MacWorld Booth #1707

Communications made easy
Circle 61 on reader service card

PSI Integration, Inc. 851 East Hamilton Avenue, Suite 200 Campbell, California 95008—COMstation, PowerModem, TraveKOM, the PSI logo, and "Communications made easy" are trademarks of PSI Integration, Inc. Other brand names and product names are trademarks or registered trademarks of their respective companies. For the name of a PSI International Distributor call (408) 559-8544.

After Thousands of Hours Working With CD-ROM Drives, I Knew The Best When I Saw It.

Scholar, pianist and university professor Robert Winter is the author of the best-selling CD-ROM music software ever marketed—the Voyager CD Companion to Beethoven's 9th Symphony.



"Over the last two years I have spent more than 3,000 hours working with CD-ROM drives. I have used at least a half dozen drives, including those from all of the major manufacturers. Through hard experience I came to have very specific desires for the ideal drive — one I thought I would never see.

When I found the Chinon drive at a trade show, I couldn't believe my eyes — or ears. All the things I was looking for were there: a small (but elegant!) footprint for easy portability; a separate power supply to eliminate cooling fans and overheating; a fast 350 ms access time; direct RCA audio outputs; a headphone jack with full-range volume control; rugged construction to withstand heavy use and travel; and a great price. It's the drive I recommend to anyone who asks — with only raves from those who have

purchased it. Those who claim that CD-ROM is a slow, stodgy technology haven't tried a Chinon drive."

Chinon drives are available in external versions for both IBM-compatible and Macintosh computers, and a half-height internal version for IBM compatibles.

Experience Chinon's exciting CD-ROM/Audio drives for yourself. Call TOLL-FREE for the reseller nearest you. Whether for work or play, data or audio, it'll be music to your ears.

CHINON

Chinon America, Inc., 660 Maple Avenue, Torrance CA 90503

Toll-Free (800) 441-0222

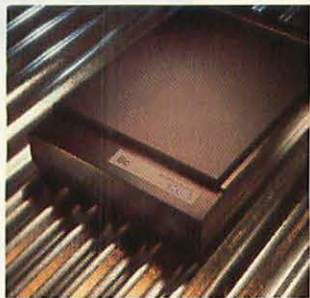
In California (213) 533-0274 Fax: (213) 533-1727

IBM is a registered trademark of International Business Machines Corporation. Macintosh is a registered trademark of Apple Computer, Inc.

Circle 94 on reader service card

can work with Mac II's and PCs. Intended in part for organizations with both kinds of systems, the monitor is also compatible with IBM's higher-end 8514 graphics standard. The noninterlaced display provides a resolution of 1024 by 768 pixels.

The Model RE-1422's suggested list price is \$745. The monitor is shipping now. Relisys, 408/945-9000.—T.M.



ROBERT PERRY

THE 6C OMNIMEDIA FROM XRS IS A 600-DPI FLATBED SCANNER FOR PAPER OR TRANSPARENCIES.

600-dpi Scanner Does Transparencies

X-RAY Scanner Corporation (XRS) has begun shipping the 6c OmniMedia, a 600-dpi flatbed scanner that works in the usual reflective mode but can also scan slides and transparencies. For transparent scanning, a special light bar on the scanner moves in tandem with the scan head, but on the other side of the transparency.

TREND

Fourth New Integrated Package

MACVONK USA, A SUBSIDIARY OF THE European company that publishes the combination desktop publishing/integrated package RagTime, is fielding a low-end entry in the suddenly-crowded integrated software market. Beagle Bros has announced an integrated package that may be shipping by the time this story is in print; ClarisWorks and Symantec's GreatWorks are shipping now.

MacVont's new HandiWorks will list for \$175 but looks and feels an awful lot like the \$599 RagTime, with text and spreadsheet frames and frames for imported graphics. Instead of the database module found in most integrated packages, HandiWorks has a desk accessory called Address Manager that can work with HandiWorks documents when addressing letters or doing a mail merge. MacVont, 408/973-7100.—D.L.

The scanner comes with drivers and graphics software for both Macs and PCs. For the Mac, the graphics software is a complete version of Adobe PhotoShop. The 6c OmniMedia is shipping now at a suggested retail price of \$3500. XRS, 213/214-1900.—T.M.

Modular Medical Library

CD ROM technology is being put to good use as a medium for distributing quarterly updates of standard medical reference materials to doctors. Teton Data Systems (the company was founded by a Wyoming physician) publishes a CD ROM called Stat-Ref. Version 3.0 is getting a major upgrade with a new front end and search tools built on the Personal Librarian engine (see "Big Words," *Macworld News*, July 1991).

The CD will contain 20 locked volumes that can be opened by calling in a credit card number to obtain a password. Stat-Ref 3.0 will be able to rank search results by relevance based on frequency and proximity of search terms and will have hyperlinks to jump between references. Price depends on the number of volumes unlocked. Teton Data Systems, 718/729-1888.—D.L.



PETER HOEY

EPA Restricts Internal Mac Use

THE ENVIRONMENTAL Protection Agency recently issued a policy statement cutting back on the agency's support for Macs. Macs have become popular at the EPA for general-purpose use, but the document reads, in part, "[EPA] will continue to provide limited support for Macintosh computers, but ONLY when those computers are used for scientific applications for which solutions are not available in the MS-DOS

News

environment or as desktop publishing systems." The agency cited the cost of supporting both Macintosh and DOS users, and pinpointed networking and communications costs as the straw that broke the camel's back.

Donald Fulford, who as director of the EPA's National Data Processing Division issued the policy statement, did not return *Macworld's* phone calls.—D.L.

Mail-Order House Shuts Down

CDA Computer Sales, a \$12 million Macintosh mail-order company, is about to file for bankruptcy. The company has reportedly sold off all of its inventory and shut down its operations. CDA president Marc Daniels said he will try to pay back customers who paid for products they did not receive, but some will not get their money back.

New Jersey police investigating CDA received over 1400 customer complaints before turning the investigation over to the U.S. Postal Service. Consumers should forward their complaints, with copies of canceled checks and invoices, to: U.S. Postal Service, P.O. Box 509, Newark, NJ 07101, Attn: Fraud Section.—Carolyn Bickford



MANUELLO PAGANELLI

MICHELLE KIENHOLZ WITH HER DEAD JASMINE DRIVE FROM CDA.



TURKEY SHOOT

EARLY SIGHTINGS OF PROBLEM PRODUCTS

Summagraphics' Demon Summagraphics' installer puts the digitizing tablet's driver inside the System file. When the INIT conflicts start you can't just dra-a-a-g it out of the System Folder. What a drag.

Aldus Table Editor Look under the File menu. Surprise! No Print command.

QMS and Adobe Is she or isn't she? Only her code-parser knows for sure. We'd like to know if the QMS-PS 410, 815, and 825 are entirely Adobe PostScript or mostly QMS's UltraScript.

Macworld will send you a Turkey Shoot T-shirt if we shoot your turkey in this column. See *How to Contact Macworld*.

We'll Pay You To Hire The Best Accountant In The Business



\$75 Cash Rebate. Put Accountant, Inc. to work for you and the rewards begin immediately. You'll get the most complete integrated accounting system for the Macintosh. Plus, you'll get a \$75 cash rebate.

Get A Great Deal. And A Great Deal More.

Accountant, Inc. is the only small business accounting system that configures to your needs -- and works the way you work. But don't just take our word on it. Listen to MacUser magazine. They say "Accountant, Inc. is the most complete integrated accounting and financial management package available for the Mac. You can make full use of the program without having to know much about accounting."

There are payroll and inventory, of course, as well as accounts payable and receivable. And with Accountant, Inc. you'll breeze through the normally tedious tasks of invoicing and check writing. Along with purchase orders, and much, much more!

Every entry is automatically posted and updated into the General Ledger and Financial Reporting System instantly. And because you can open as many windows as you need, all of Accountant, Inc.'s powerful features can be used simultaneously. What's more, all of your information can be easily exported to standard spreadsheets, word processors and data base programs.

Run Your Business Without Running Yourself Ragged.

Accountant, Inc. can help you do more than just keep your books. It can help you run your business more efficiently. Because Accountant,

Inc. lets you create over 100 different types of reports and analyses. With the touch of a button you get customer statements, account agings, sales analysis, income and balance sheets. You name it.

Accountant, Inc. is easy to learn and easy to use. It's System 7 compatible. And, unlike most other accounting programs, Accountant, Inc. can keep up with your growing business.

Move up to Accountant, Inc./MultiUser and all your employees can have instant access to the information they need to help you run your business more efficiently.

What's more, our technical support hotline is staffed with professionals who are always ready to give you all the help you need. And Accountant, Inc. is backed by a nationwide network of independent Qualified Installers who can provide you with on site assistance in setting up and fine tuning your new system.

\$75 Says You Won't Find A Better Accountant.

So, compare systems. Check out features. Make your best deal. Then hire the best accountant in the business: Accountant, Inc. Call 1(800) 933-2537 today. You'll get \$75 cash back. And a more profitable future.

Accountant, Inc. suggested retail price: \$595. Multiuser (3 users) Introductory price \$995 (suggested retail: \$1295);

Additional user modules, introductory price: \$195 (suggested retail \$295); Upgrade to MultiUser \$300, or \$250 with extended support.

This offer expires February 29, 1992 and cannot be used with any other offer or promotion.



Accountant, Inc.TM
Accountant, Inc./MultiUserTM
1(800)933-2537
Softsync, Inc.

Requires Apple Macintosh with at least 2 megabytes of memory and hard disk. Works with Plus, SE, SE/30, II, IIx, IIcx, IIfx, Portable, Classic, Classic II, Powerbook 100, 140 & 170, Quadra 700 & 900, si, LC, ImageWriter, LaserWriter, StyleWriter, Appleshare and Multifinder. Copyright 1991, Softsync, Inc. Accountant, Inc. and Accountant, Inc./MultiUser are trademarks of Softsync, Inc. Apple and Macintosh are registered trademarks of Apple Computer, Inc. All other trademarks acknowledged.

Circle 367 on reader service card

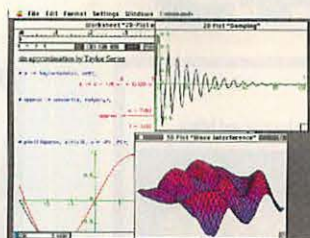
MicroNet's Quadra SCSI Manager

THE MICRONET SCSI MANAGER is a software driver that lets a Quadra 700 or 900 transfer data faster and allows the 900 to support up to 14 SCSI devices. The data-transfer rate improves from 3.5MB per second with Apple's SCSI Manager to 4.7MB with MicroNet's software, according to the company. The support for 14 SCSI devices on the Quadra 900 is possible because the driver logically separates the 900's two SCSI connectors. However, up to seven of the SCSI devices must be from MicroNet.

MicroNet has begun shipping the software with all of its drives for the Quadras. With its Micro/Raven040 disk arrays the transfer rate goes up to 7.1MB per second (see *MacBulletin*, January 1992). The company expected to begin shipping a version with mirroring capability in December 1991. MicroNet Technology, 714/837-6033.—T.M.

Maple Turns Over New Leaf

The combination symbolic and numeric algebra processor Maple has been upgraded to version 5. The new version adds three-dimensional plotting and supports more integrals and functions. Like Mathematica, Maple runs on a



AN EXAMPLE OF MAPLE'S WORKING ENVIRONMENT AND GRAPHS.

wide range of computers and can share command files across platforms. Maple provides tools for combinatorics, geometry, group theory, statistics, linear algebra, and many other kinds of mathematics. \$450; site licenses are available. Waterloo Maple Software, 519/747-2373.—D.L.

Alisa Expands into Unix

Alisa Systems is widening the reach of its Mac-to-VAX VMS connectivity product, AlisaTalk, with a full set of Unix tools. AlisaTalk for Unix provides services to Macs attached to Sun, Digital, and IBM systems running Unix, Ultrix, or AIX. Like the VMS product, AlisaTalk for Unix provides file sharing and file transfer; print spooling using the Unix machine or direct access to printers on the network; and terminal emulation for the Mac. The new AlisaTalk also provides access to UUCP-based E-mail systems and has a suite of management tools. Price depends on CPU. Alisa Systems, 818/792-9474.—D.L.

Ink-jet Printer Produces Large Images

The Bezier Systems BP3670 is a large-format thermal ink-jet printer that can print on paper up to 17 inches wide. The printer produces about 6 letter-size pages per minute at 180 by 180 dpi and can also print at 360 by 360 dpi.

The BP3670 comes with a raster image processor (RIP) for WYSIWYG output on Macs or Sun SPARCstations. The printer has a SCSI port for faster data transfer. Available now, the BP3670 lists for \$1995. Bezier Systems, 408/345-0345.—T.M.



THE BP3670 LARGE-FORMAT INK-JET PRINTER FROM BEZIER SYSTEMS.

A Speeding MacRenderMan

STARTECH HAS COME OUT with a NuBus accelerator board designed to add some whizbang to MacRenderMan, Pixar's photo-realistic rendering package. The 860Edge uses Intel's i860 RISC processor to render

News

graphics about 10 times faster than a Mac IIx, according to StarTech. The board runs in the background under MultiFinder and holds up to 128MB of RAM.

The accelerator works with all NuBus Macintoshes from the Mac II Rev B (later units of the Mac II) on up, including the IIsi. The 860Edge is currently shipping for \$6695 without RAM, \$6995 with 8MB, and \$7995 with 32MB. StarTech, 619/457-0781.—T.M.

Fast SCSI-2 for the Quadras

The Data Cannon II from Storage Dimensions is a Fast SCSI-2 NuBus board for the Quadras that can double those systems' data-transfer rates and support an additional seven SCSI devices. With the board the Quadras can sustain up to a 10MB-per-second transfer rate.

The board will support Fast SCSI-2 drives expected to be available from Storage Dimensions and others by the end of 1991. The Data Cannon II is slated to ship in January at a list price of \$999. Storage Dimensions, 408/954-0710.—T.M.

VIRUS WATCH

CURRENT VIRUSES,
TROJAN HORSES, AND WORMS
AFFECTING
THE MACINTOSH COMMUNITY.

Zuc C

TYPE: Virus
FIRST LISTED IN VIRUS WATCH: 10/91
INFO: A Zuc clone.
IMPACT: Nondestructive; infects applications and system files; renders cursor inoperable

HC

TYPE: Data Virus
FIRST LISTED IN VIRUS WATCH: 6/91
INFO: Infects HyperCard stacks.
IMPACT: Causes the Mac to hum oddly.

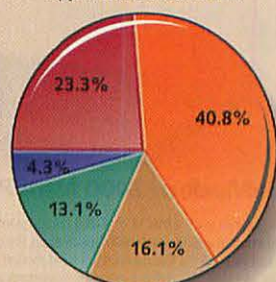
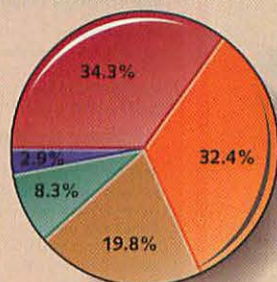
nCam

TYPE: Virus
FIRST LISTED IN VIRUS WATCH: 5/91
INFO: An nVIR clone.
IMPACT: Nondestructive; infects applications and systems files; can cause crashes.

Reader Survey: Apple-IBM

The Apple-IBM agreement is very beneficial to end-users.

The long-term results for Apple will be beneficial.



Strongly agree Agree Disagree Strongly disagree

This month's survey was mailed to 750 readers; 398 usable responses were returned.

Many of our products come with a thirty day money back guarantee, if you are not completely satisfied. Ask for details when you place your order.



Hayes Personal Modem 2400 Plus with Smartcom

The Hayes Personal Modem 2400 Plus provides you with everything you need to go on-line. This 2400 baud modem has a built-in call-monitoring speaker and two LEDs, plus both phone and computer cables. Included in the package is the Smartcom terminal software to make using your modem simple and convenient. It fully supports the Mac interface. Also emulates popular terminals, such as TTY and VT52/102, to make mainframe and mini access easy. File transfer protocols include XModem and MacBinary.

Manufacturer: Hayes MOD0060

\$149

FoxBASE+/Mac 2.0

Combines the flexibility of the dBase language, the speed of FoxBase+, and the userfriendly Mac interface. Runs all your dBase III Plus programs on the Mac, without requiring you to change a single line of source code. In NSTL benchmarks, it outperforms other relational database managers, some by as much as 200 times. Version 2.0 has an improved report writer that creates complex columnar and free-form reports - without programming. Procedure language now provides access to up to 16 HyperCard external functions and commands (XFCNs and XCMDs). Manufacturer: Fox Software DAT0047



\$295



PacerTerm

Combines today's standards—Communication Toolbox and HyperTalk scripting—with a comprehensive collection of file transfer (FTP, Kermit, XMODEM, ZMODEM and others) and connection protocols (TCP/IP, LAT, and others). Keyboard remapping, on-screen SoftKeys, and multiple VT320 terminal windows let PacerTerm users create powerful front-ends to host applications and on-line services. COM0106 \$159.

PacerForum

Get your workgroup working! An innovative conferencing and bulletin board application that provides easy and efficient distribution of information on any Apple Talk network. With PacerForum's icon-based graphical user interface, you can share, organize and archive text, files, pictures and sounds. 7/30/91 MacWeek calls PacerForum "a very useful tool that will greatly facilitate office communications." Publisher: Pacer Software NET0167

\$355

Timeslips III 2.0

Timeslips III 2.0 is a complete time keeping and billing package. You gather time data with TS Timer DA. When the time comes to send the bill, TS Report will extract the data and generate invoices and reports in a wide variety of formats. Timeslips can handle the big jobs: 250 users, 250 different activities and over 3,000 clients, with up to 128 projects per client. Publisher: Timeslips Corporation BUS0043



\$195



WristSaver/ WristSaver MousePad

The WristSaver cradles your wrist with a contoured neoprene rubber pad and a nylon covering. It's ergonomically designed to support your wrist at the proper angle to help avoid the pain associated with Carpal Tunnel Syndrome. The WristSaver MousePad provides a comfortable rest for your wrist, plus a conventional mouse pad. Simple finger movements replace sliding the entire arm or hand.

Manufacturer: LB Innovators
WristSaverMousePad ACC0634 \$18.
WristSaver ACC0550 \$18.
Bundle BND0031 (Available in Gray, Black, Red or Navy) \$29

\$29



ClickArt Color Graphics for Presentations

Contains more than 250 high-quality, full color images created specifically for use in slide presentations. The images have been designed to deliver quick, clean visual impact against color backgrounds typically used in presentations. The subjects, appropriate for any type of business presentation, include people in office related situations, time, money, flags, maps, business symbols, communications equipment, computers, hand symbols, backgrounds, arrows, logos and more. ClickArt Color Graphics for Presentations is available in PICT2 format for the Macintosh and works with: Aldus Persuasion®, MS®, PowerPoint®, CA-Cricket® Presents™, or any other application that imports PICT2 files. Publisher: T/Maker GRA0272

\$109



ProModem 2400 Mini Plus

Now you can get V.42bis/MNP-5 data compression and error correction in a mini-sized 2400 bps modem, for up to 9600 bps throughput! All the features of a full sized modem at half the price and size. Offered as a complete communications package with MacKNOWLEDGE™ communications software and cable. Manufacturer: Prometheus MOD0068

\$149

Meeting Maker

Meeting Maker™ is a Macintosh network application that helps you plan, schedule and confirm meetings. You can schedule a time and date, select required guests, reserve rooms and resources and prepare agendas. Meeting Maker also has a personal calendar that allows you to block out personal activities. 5-User BUS0165 \$309.

Instant Update

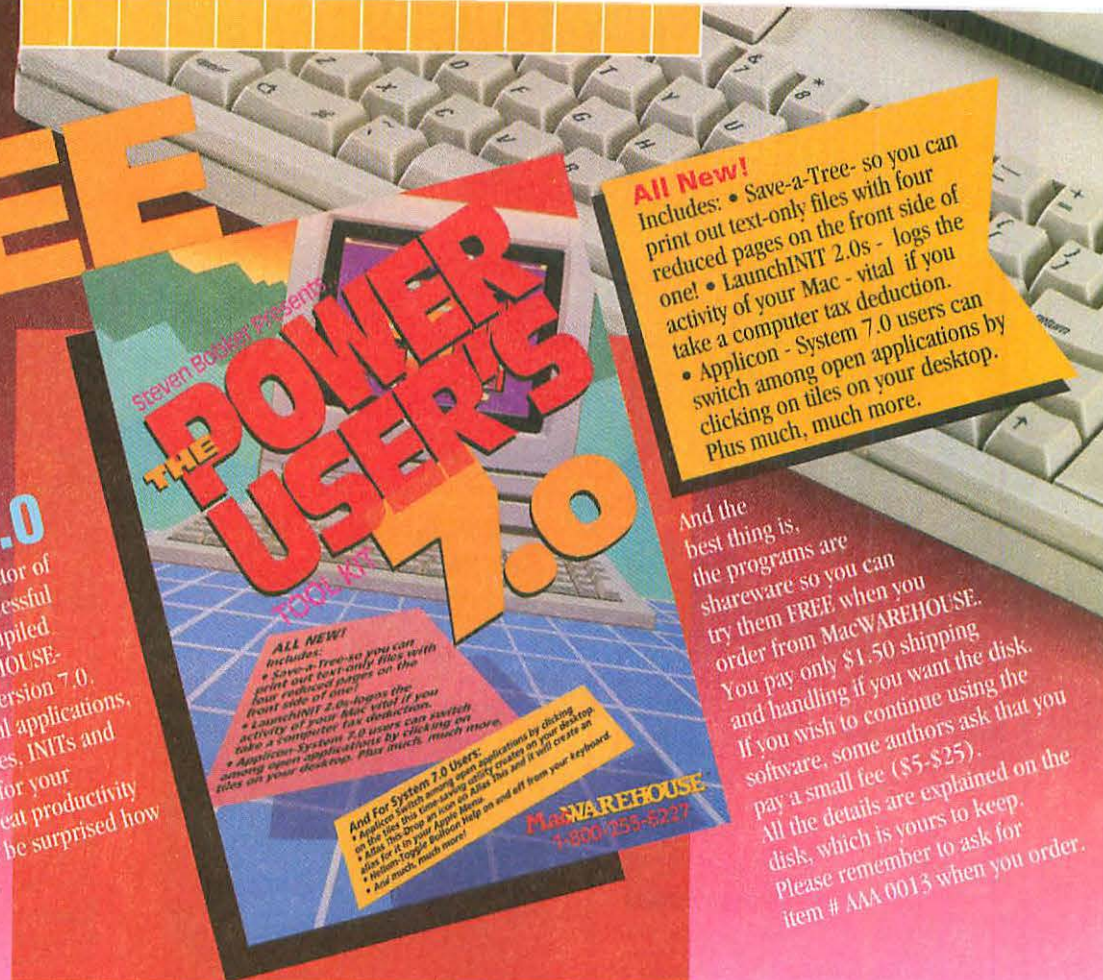
Instant Update™ is a breakthrough collaborative application for Macintosh networks that helps you communicate through live documents. Create live documents just like any word processing document, and then distribute the document to other users on the network. Press the Update button when there is a black "incoming" arrow, and any changes that were made to the document are automatically incorporated into your copy. Publisher: On Technology 2 User COM0096

\$309



POWER USERS TOOL KIT 7.0

If you're not already a collector of Steven Bobker's highly successful Power User's Tool Kit - compiled exclusively for MacWAREHOUSE - you'll want to start with version 7.0. It's stuffed with ten useful applications, utilities, desk accessories, INITs and System 7.0 extensions for your Macintosh. They're great productivity enhancers and you'll be surprised how easy they are to use.



All New!

All New!

- Save-a-Tree- so you can print out text-only files with four reduced pages on the front side of one!
- LaunchINT 2.0s - logs the activity of your Mac - vital if you take a computer tax deduction.
- Applicon - System 7.0 users can switch among open applications by clicking on tiles on your desktop.

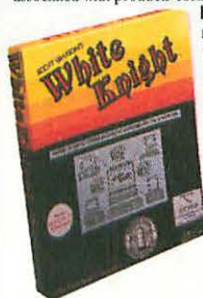
Plus much, much more.

And the best thing is, the programs are shareware so you can try them FREE when you order from MacWAREHOUSE. You pay only \$1.50 shipping and handling if you want the disk. If you wish to continue using the software, some authors ask that you pay a small fee (\$5-\$25). All the details are explained on the disk, which is yours to keep. Please remember to ask for item # AAA 0013 when you order.

White Knight V.11

❶ The perfect low-cost solution to almost any Mac telecommunicator's needs. Offers the kind of power associated with products costing hundreds of dollars more, but is easier to learn and more flexible. 270+ page user manual is geared to all levels of experience. Winner of 11 awards including MacWorld's World Class Software Award 1987-1991. **Publisher: Free Soft COM0060**

\$ 85



BLUEPRINT

Blueprint 2.1



● Blueprint makes 2D drafting and design easy. It has a hierarchical symbol library, automatic alignment, auto-dimensioning, and witness lines. It calculates with 9-decimal precision, so you can work at any convenient scale. Blueprint offers unlimited layers, color, hatching, mirroring, and a built-in DXF translator. Blueprint also exports EPS files.

Publisher: Graphsoft
CAD0024

\$510

\$219

WordScan

WordScan offers the same basic OCR capabilities as WordScan Plus but does not include the more advanced features. UT10215 \$249.

WordScan Plus
offers accurate OCR with a wealth of user conveniences. Special dictionaries help WordScan read pages other software can't read. It even reads faded documents and draft-quality dot matrix output. Deferred Processing allows you to scan now and process later. Advanced features include, Pop-Up Image Editor, AutoClipping and Style Sheets.

**Publisher: Calera
Recognition Systems
UT10216**

\$739



\$739

THINK C 5.0

Integrates the editor, linker, and compiler to form a complete C language development environment. A multi-window text editor and a source-level debugger make finding and solving problems fast and painless. It's all new ANSI C compiler and code generator produce compact, efficient code, which is 32-bit clean. Runs in 32-bit mode, with or without memory.

Publisher: Symantec
LANG051

\$199



I'm Kerry, call me at:

MacWAREHOUSE
1-800-255-6227

(1-800-ALL-MACS)
Inquiries: 908-367-0440
FAX: 908-905-9279
Call 24 hours a day,
seven days a week.
**NEW! Express
Customer
Service Number:
1-800-445-9677**
*Midnight Express service
available weekdays.



We carry more than 2000 Macintosh products, including all the latest releases and new versions. We pride ourselves on getting new products first. Just fill in the information requested below and mail the coupon. We'll start you free, one-year subscription to the MacWAREHOUSE catalog with the next issue.



FREE CATALOG SUBSCRIPTION MWB:
Free MacWAREHOUSE Catalog Subscription

1690 Oak Street, P.O. Box 3031, Lakewood, NJ 08701

Please enter my free, one-year subscription to the MacWAREHOUSE catalog

Name _____

Address	Ant.
---------	------

City	State	Zip
------	-------	-----

(Expect to receive your first issue within 4-6 weeks)

**OVERNIGHT DELIVERY
ONLY \$3.00
1-800-255-6227**

**Mac
WAREHOUSE**

GUARANTEE

Many of our products come with a thirty day money back guarantee, if you are not completely satisfied. Ask for details when you place your order.



Accountant, Inc.

⑦ "Accountant, Inc. is the most complete integrated accounting and financial management package for the Mac," says MacUser magazine. It's an easy to use program that gives you exceptional power to streamline your accounting. You only have to enter information once because every transaction is automatically posted to the General Ledger. Accountant, Inc.'s revolutionary System 7 design means you can customize your forms, screens and reports by hot linking with your favorite forms design, spreadsheet and data base programs. You get Invoicing, Accounts Receivable, Inventory, Accounts payable, Check Writing, General and Payroll. Accountant, Inc. is available in single and multiuser versions. Publisher: SoftSync/BLOC FIN0048

\$339

Symantec AntiVirus for the Mac (SAM) 3.0

⑦ SAM detects viruses by monitoring the suspicious activities that characterize them. New version 3.0 has enhanced update and repair capabilities, faster scanning, and more. The INT portion acts like a watchdog during startup to detect viral activity. The CDEV portion operates during normal Mac usage, and offers a number of options for checking disks and folders as you work. Audit Trail keeps track of its activity and your responses. Includes Virus Clinic. Publisher: Symantec UT10214

\$65



The UnMouse

⑦ The UnMouse does everything a mouse can—only faster, easier, and in less space. To move the cursor, simply slide your finger over the glass surface. To make a selection merely press down. The UnMouse also serves as an extended keyboard. Tap the large red button and you have a Power Keypad with 16 keys instantly available to execute macros (60 in advanced mode). With its one million touch points the UnMouse also performs as a small graphics tablet. Manufacturer: Microtouch INP0084

\$159



HAND-Off II ver. 2.2.1



⑦ Get HAND-Off II for fast, easy file access. ••SuperMenu™ for System 7 makes the Apple menu multi-level. Instantly open or browse an unlimited number of files, folders, applications or aliases hierarchically. ••Pop-up menuing speeds opening files and applications with "Bridges™" which create custom groups of applications and/or documents. ••"On-the-fly" application substitution eliminates the annoying "Application Not Found" error message. ••Switches application color depth and sound level automatically. ••AutoHide™ reduces Desktop clutter by automatically hiding background applications. Publisher: Connectix UT10148

\$56



Puzzle Master

⑦ Solve crossword puzzles or create your own. Includes 250 of The New York Times® classic puzzles, 200 daily puzzles and 50 Sunday puzzles. Built-in timer and scoring system allows you to test your skill against the experts. ENT0383 \$29.

Canis

⑦ A new educational/reference program for current and prospective dog owners. Includes VGA pictures of most popular breeds, health care, and nutrition. ENT0384 \$27.

Blackjack Strategy Tester

⑦ Test Blackjack betting and playing strategies by playing up to 100,000 hands under a broad variety of setups. ENT0329 \$65.

Casino Master

⑦ Offers all the fun of playing the odds in Las Vegas without the risks. Simulates the five most popular casino games: Blackjack, Craps, Roulette, Poker, and Baccarat.

Publisher:
Centron Software
ENT0277

\$40

Targus Universal Notebook Carrying Case for the Mac

Designed especially for the new generation of Notebook Macs, The Targus Universal Notebook Carrying Case provides a convenient way to tote your computer and accessories (including a printer). Two padded compartments (11x13x2.5 inches each) keep your Notebook computer and accessories separated. Non-skid rubber feet, rugged Coslin finish, velcro closures and self-healing nylon zippers top it off. Manufacturer: Targus ACC0675



\$79



PowerCache

⑦ 33, 40, 50 MHz PowerCache. Here's the affordable way to get the maximum from your software. DayStar's proprietary technology combines a blazing fast 68030 processor with a superfast RAM cache. Now you can get 040 performance with proven 030 compatibility including System 7.0 virtual memory. Accelerates virtually every function in all applications. An optional math chip is a real time saver for spreadsheet recals and scientific tasks. The universal design makes it easily transportable to almost every Mac including the SE/30, II, IIfx, IIfx, LC, IIfx & IIfx. Guaranteed 100% compatible. Manufacturer: DayStar Digital See line listings for prices. PowerCache 40MHz DR10467

\$949



Rapport

⑦ Use any combination of Rapport and Kennet's Drive 2.4 (3.5") or Drive 1200 or Drive 360 (5.25") to read, write and format all Mac and IBM formats on your Macintosh. Or use Rapport alone on older Macintoshes to read IBM files from your internal drive. Manufacturer: Kennet Technology
Drive 2.4 DR10141 \$325.
Drive 360 DR10219 \$259.
Drive 1200 DR10218 \$259.
Rapport DR10140

\$195

COMPUSERVE®

You can now contact MacWAREHOUSE or place orders with us in the Electronic Mall on CompuServe. The MacWAREHOUSE GO code is GO MW.

As always, you'll get fast, dependable overnight service and you can leave messages for Kerry or any of our support staff.



**ORDER
UNTIL
MIDNIGHT(EST)
FOR
OVERNIGHT
DELIVERY**

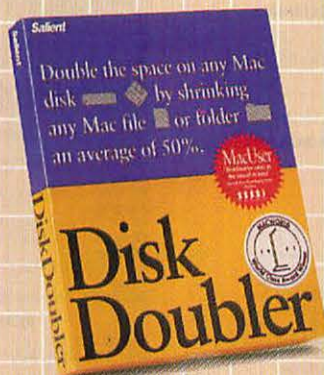


MacPrint 1.2

Use a Macintosh with non-Apple printers. Print Mac applications on HP LaserJet, Deskjet or compatible printers including all Series IIs, IIsx and the Deskjet 500. Prints text and graphics at the printer's maximum resolution.

Does not require PostScript. Cable is included. Publisher: Insight Development UT10098

\$95



Disk Doubler 3.7

Disk Doubler 3.7, the system 7 savvy version, can double your hard disk and floppy disk storage capacity without the expense of an additional hard disk. The new version provides even more enhancements, including smaller compressed file sizes, increased compression speed, and self-expanding files, which may be expanded without needing the Disk Doubler application. Disk Doubler can also split large files into pieces for backup purposes and combine files together for telecommunications. Works transparently within any application, and operates in the background under MultiFinder. Disk Doubler works with documents, applications, plus sound graphics, and scanner files. Publisher: Salient Software UT10179

\$49

Word Search Deluxe

Perfect for newsletters, classrooms, and puzzle enthusiasts everywhere. Fun to create. Fun to play. Improve your vocabulary in any subject. Use as stand alone application to create, play and print word search puzzles or use in combination with word processing, paint and page layout programs for more decorative results. Supports color and digitized sounds. Publisher: Nordic Software EDU0276



\$35



MAXIMA 2.0

4MB SIMM users! MAXIMA 2.0 extends your RAM access to as much as 128MB. Creates a powerful non-volatile RAM disk that survives system crashes, restarts, and shutdowns. Use the RAM disk to reduce boot time, accelerate many routine operations, and

speed up memory intensive applications. Get MAXIMA 2.0 to maximize your RAM investment for System 6 or 7 in 24- or 32-bit mode. Publisher: Connectix UT10209

\$45



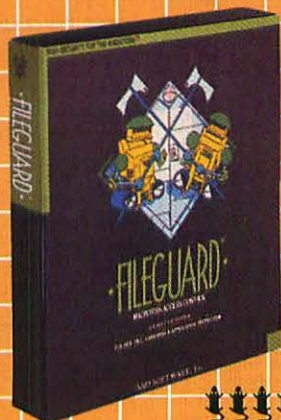
The "ULTIMATE" Classic & Classic Extended Carrying Case

All Ultimate style carrying cases are designed with the same high quality standards as other MacLuggage™ products. The "Ultimate" Classic case (pictured closed), offers padded internal compartments for keyboard, external drive, mouse & cords. The Classic Extended case (pictured open) offers these same features plus an internal 9x9x3" padded peripheral pocket. Both models offer two external pockets for everything from disks to umbrellas. Combine these features with sturdy Dupont Cordura Plus™ nylon exteriors, 1/2" high density foam padding, and a LIFETIME WARRANTY and you'll see why these are the "Ultimate" carrying cases for your Mac. Available in navy blue and black.

Manufacturer: I/O Design, Inc.

Ultimate Classic
ACC0529 \$65.
Ultimate
Classic Extended
ACC0440

\$85



FileGuard 2.7

"It's sleek, fast, and safe. I highly recommend it." MacUser April 1991. Protect your Hard Drives and Partitions from unauthorized access (including security bypass with a system diskette), copying and erasure. Applications and File/Folders (including system folder) from unauthorized access, deletion, and for illegal copying. Desktop (including system folder) from alterations by unauthorized user. Keep an eye on System Usage with the system users log which continuously tracks user/group activity. System 7 compatible. Publisher: ASD Software Office 5 Pack UT10130 \$499. Office 10 Pack UT10131 \$799. Single UT10135

\$139

Design Your Own Home:



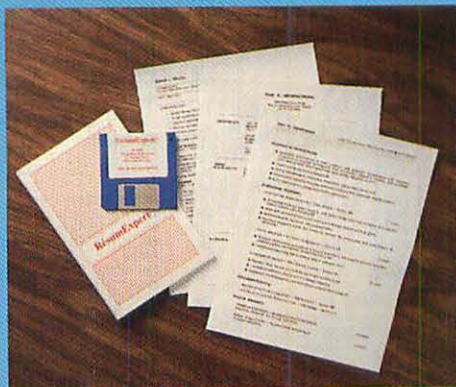
Design Your Own Home: Architecture, Interiors, or Landscape. Create floor plans and building plans with structural details. Do individual room plans and kitchen/bath design. Then complete your dream house with graphic landscape plans. Interiors and Landscape programs generate 4 side views from top-view perspective. Sample plans included. Publisher: Abacadata

\$65 ea.

ResumExpert

Whether you're seeking an entry-level position or an executives corner office, ResumExpert Software Editions are the next best thing to knowing the boss. Each edition features 40+ professionally written and fully-formatted Microsoft Word templates that let you quickly and easily create eye-catching resumes. Just select a template, highlight the text and substitute your personal information. MacUser 10/89 awarded ResumExpert 4 mice and raved about the "excellent" manual that includes expert writing tips. MacUser 12/89 rated it as one of the Top 200 Software Programs of 1989. See listings for editions. Publisher: A Lasting Impression BUS0087

\$49



Many of our products come with a thirty day money back guarantee, if you are not completely satisfied. Ask for details when you place your order.



ACCESSORIES

Fuji		
MED0056	MF2DD 100PK	59
MED0047	MF2HD 50PK	59
I/O Design, Inc.		
ACC0040	Ultimate Classic/SE Ext. Carrying Case - Navy	85
ACC0528	Ultimate Classic Carrying Case	65
ACC0665	PowerBook Carrying Case	75
Kensington		
ACC0621	Classic Anti-Glare Filter	49
ACC0618	LaserStand	129
ACC0459	SE Anti-Glare Filter	52
LB Innovators		
MED0031	WristSaver/MousePad Bundle	29
Sony		
MED0031	Disks - 1.44 Mb High Density (3.5)	21
MED0003	Disks - DS/DD (box of 10)	13
Targus, Ltd.		
ACC0251	Imagewriter II Carry Case	49
ACC0252	MacPlus/SE Carry Case (black)	65
ACC0250	MacPlus/SE Ext. Keyboard Carry Case	79
ACC0252	Premier Classic Carry Case w/XKB	79
ACC0675	Universal Notebook Case	79

BUSINESS & PRESENTATION

A Lasting Impression		
RESUMExpert	Word 30/4.0 version, Cover Letters, Manager, Sales & Marketing, Students, Computer Science & Engineering, Financing & Banking	49 ea.
Aldus		
BUS0066	Persuasion 2.0	339
CE Software		
GR0070	CalendarMaker 3.0	31
ChipsSoft		
FIN0132	MacinTax '91	59
Claris		
DAT0054	FileMaker Pro	215
BUS0058	MacProject II 2.5	359
BUS0178	Resolve	279
BUS0065	SmartForm Designer	289
Fox Software		
DAT0047	FoxBASE+/Mac 2.0	295
Intuit		
FIN0130	Quicken 3.0	44
Kaetron		
BUS0100	TopDown 3.0	219
Lotus Development Corporation		
BUS0188	Lotus 1-2-3 for Macintosh	329
Meca		
FIN0039	A Tobias' Managing Your Money 4.0	139
Microsoft		
BUS0167	Microsoft Excel 3.0	299
BUS0008	Microsoft PowerPoint 2.01	245
BUS0181	Microsoft Project 1.1	449
BUS0186	Microsoft Schedule+ 5 Pack	129
BUS0014	Microsoft Works 2.0	159
BUS0088	The Microsoft Office 2.0	479
On Technology		
BUS0165	Meeting Maker 5-user	309
Portfolio Systems		
BUS0101	Dynodes 2.0	72
Power Up		
BUS0153	Address Book Plus 2.0	65
BUS0073	Calendar Creator	45
BUS0121	FastForms 2.0	115
Reality Technologies		
FIN0068	WealthBuilder (Mac)	95
Round Lake Publishing		
BOK0026	Legal LetterWorks	52
BOK0007	LetterWorks	52
BOK0016	Sales LetterWorks	52
Softsync/BLOC Publishing		
FIN0048	Accountant, Inc.	339
SuperOffice		
BUS0191	SuperOffice Single user	249
BUS0192	SuperOffice 1-5 users	999
Symantec Corporation		
BUS0176	GreatWorks/free Norton Utilities	199
BUS0055	More 3.1	265
Synex		
BUS0120	MacEnvelope Plus 2.0	185
Teleware, Inc.		
FIN0087	M.Y.O.B. 2.0	139
Timeslips		
BUS0043	Timeslips III 2.0	195
T/Maker		
BUS0193	The PowerBundle	159

COMMUNICATIONS & NETWORKING

Argosy		
COM0098	RunPC/Network	279
COM0103	RunPC/Remote	139
CE Software		
COM0100	QuickMail 2.5 (1 - 10 users)	379
Dayna		
NET0125	DaynaPORT E/Z	279
NET0076	DaynaPORT E/SE	229
Farallon™ Computing		
NET0145	New PhoneNet Ethernet Card-MacII	219
NET0146	New PhoneNet Ethernet Card-Mac II 10PK	219
NET0147	New PhoneNet Ethernet Card-SE/30	219
NET0148	PhoneNet Ethernet Card-SE/30 10PK	219
NET0149	PhoneNet Ethernet Card-SE/30	219
NET0150	PhoneNet Ethernet Card-SE/30 10PK	219
NET0007	PhoneNet® Plus, SE & II	31
NET0019	PhoneNet Star Controller®	639
NET0122	Timbuktu® 4.0	129
NET0034	Timbuktu Remote® 3.0	129
FreeSoft		
COM0060	White Knight V.11	85
Insigma		
COM0107	Soft PC Universal 2.5	199
On Technology		
COM0096	Instant Update-2 user	309
Pacer Software		
NET0167	PacerForum	355
COM0106	PacerTerm	159
Silka		
NET0049	MacTOS 3.1	187
Software Ventures		
COM0094	Microphone II 4.0	215

Technology Works

NET0133	GraceLAN 2.0 50-user	295
---------	----------------------	-----

DESKTOP PUBLISHING

Aldus		
DTF0072	PageMaker 4.2	499
DTF0040	Personal Press 1.0/free PGA Tour Golf	109
TimeWorks		
DTF0071	XPress 3.1	589
DTF0048	Publish It! Easy with File IT! 2.1.2	139

DISK DRIVES & BOARDS

Computer Care		
DRI0337	Mac Rescue Video	349
DRI0338	Video Mac Pac	349
Kenneth Technology		
DRI0140	Rapport	195
Mass Microsystems		
DRI0253	DataPak IIC	649
DRI0254	DataPak IIC	749
DRI0354	DataPak 88 Classic	899
DRI0451	DiamondDrive 120 MB Fixed Drive	679
DRI0452	DiamondDrive 320 MB Fixed Drive	1879
DRI0452	DiamondDrive 210 MB Fixed Drive	1139
DRI0454	DiamondDrive 510 MB Fixed Drive	2599
Peripheral Land, Inc.		
DRI0375	Infinity 88 Removable single	849
DRI0193	Infinity Dual 40MB Removable	1199
DRI0115	Infinity Turbo 40 Meg Removable	699
PowerUser™		
DRI0201	20 Meg External Hard Drive	329
DRI0266	44 Meg Removable	559
DRI0455	88 Meg Removable	829
DRI0203	40 Meg External Hard Drive	399
DRI0204	60 Meg External Hard Drive	449
DRI0205	80 Meg External Hard Drive	449
DRI0326	100 Meg External Hard Drive	499
SuperMac		
DRI0437	Spectrum/8 24 PDQ	999
DRI0438	Spectrum/8 24 PDQ si	999
DRI0439	Spectrum/24 Series II	1799
DRI0440	Spectrum/8si	559
DRI0441	Spectrum/8LC	559
DRI0442	Spectrum/8 SeriesIII	559

EDUCATIONAL & ENTERTAINMENT

Amaze Inc.		
ENT0400	The Far Side Computer Calendar	49
Baseline		
ENT0403	Talking Moose/Carroll Carnival 4.0	23
Broderbund		
GRA0268	Kid Pix 1.2	35
	Where is Carmen Sandiego?	ea. 29
ENT0284	SimCity	29
ENT0356	SimEarth	40
EDU0170	The Playroom	29
Centron Software, Inc.		
ENT0329	BlackJack Strategy Tester/BlackJack Ace	65
ENT0384	Canis	27
ENT0277	Casino Master	40
ENT0383	PuzzleMaster	29
Learning Company		
EDU0287	The Writing Center	59
EDU0275	SuperSolvers Math: Out Numbered!	35
MECC		
ENT0381	The Oregon Trail	29
EDU0190	Number Munchers	29
EDU0191	Word Munchers	29
Nordic Software		
EDU0276	Word Search Deluxe	35
Penton Overseas (Full line available)		
Picture It! Level I: Spanish, German, French, Italian	ea. 42	
VocabLearn/Level I, II or III: French, German, Hebrew, Italian, Japanese, Russian or Spanish	ea. 35	
Personal Training Systems		
Macintosh, HyperCard, FileMaker Pro, Microsoft Excel, Microsoft Word, Aldus PageMaker 4.0, Aldus FreeHand, Aldus Persuasion, Quark XPress 3.0	ea. 52	
EDU0277	Converting to System 7-part 1	52
EDU0278	Converting to System 7-part 2	52
Sir Tech Software, Inc.		
ENT0346	Bane of the Cosmic Forge	35
Visionary Software		
BUS0190	First Things First	49
EDU0209	Synchronicity 3.0	45
Zondervan Publishing House		
BOK0022	MacBible - Greek	119
BOK0021	MacBible - King James Version	79
BOK0023	MacBible NRSV/Apocrypha	79
BOK0020	MacBible - New International Version	79

FONTS & APPLICATIONS

Adobe Systems, Inc.		
DAC0028	Adobe TypeAlign	65
FON0264	Adobe Type Manager 2.0	59
FON0351	Adobe Type On Call	47
FON0295	Adobe Type Reunion	41
Broderbund		
FON0459	TypeStyle 2.0 w/ATM	129

GRAPHICS & MULTIMEDIA

Abracadabra		
CAD0032	Design Your Own Home-Architecture	65
CAD0033	Design Your Own Home-Interiors	65
CAD0034	Design Your Own Home-Landscapes	65
Adobe Systems, Inc.		
DTF0054	Illustrator v.3.2 (w/ATM 2.0)	359
GRA0125	Streamline 2.0	122
GRA0191	PhotoShop 2.0	549
Aldus		
GRA0092	Digital Darkroom 2.0	259
GRA0305	FreeHand 3.1	399
GRA0131	Super 3D 2.5	339
HYPO027	SuperCard 1.5	199
GRA0112	SuperPaint 3.0/PGA Tour Golf	135
Claris		
CAD0029	ClariscAD 2.0	645
GRA0271	MacDraw Pro	279
GRA0117	MacPaint 2.0	89
Dream Maker		
GRA0105	Captures Vol. 1 Business Images	69

Graphsoft

CAD0024	Blueprint 2.1	219
Innovative Data Design		
CAD0039	MacDraft 2.1	279
MacroMind/Paracomp		
GRA0273	MacroMind Director 3.0	699
GRA0233	Swivel 3D Professional	435
GRA0234	SwivelArt	81
Metro Image Base (Full line available)		
GRA0277	Metro-ImageBasics	35
Pixar		
GRA0288	MacRenderMan & Showplace Bundle	449
Praxitel		
UTI0211	Read My Lips	75
Strata		
GRA0274	StrataVision 3D 2.0	759
SuperMac		
DRI0253	PixelPaint 2.1	159
GRA0249	PixelPaint Professional 2.0	499
T/Maker		
GRA0272	ClickArt for Color Graphics Presentations	109
Virtus		
GRA0278	Virtus WalkThrough	259

PERIPHERALS

Abaton		
INP0157	Scan 300/Color	1199
Caere		
INP0205	Typist Plus Graphics	479
Epson		
INP0167	Epson EPL-7500 Laser Printer	2599
Microtek		
INP0180	Microtek ScanMaker 600ZS	1599
Seikosha		
INP041	Seikosha SP 2000 AP Printer	235
Sharp		
COM023	Wizard Oz 8200 (128K Ram)	399
SuperMac		
MON0224	19" SuperMac Color Display	1799
ThunderWare		
INP0116	LightningScan 400	385
INP0189	LightningScan Pro 256	519
INP0007	ThunderScan Plus	199

INPUT & OUTPUT

Canon		
INP0184	XAPSHOT Computer Imaging Kit Color 899	
INP0185	XAPSHOT Computer Imaging Kit B-W 749	
INP0186	XAPSHOT RC-250 Black Standalone Camera	499
CoStar		
INP0196	AddressWriter Envelope Printer	499
INP0194	Stringray	89
Datadesk International		
INP0174	Mac101E Keyboard	129
INP0183	Mac 101E Keyboard w/Quickkeys 2	149
Kensington		
INP0060	Turbo Mouse ADB (SE or II)	109
Key Tronic		
INP0155	MacPro Plus	145
INP0192	TrakPro	219
MicroTouch		
INP0084	The UnMouse	159
Mouse Systems		
INP0132	Little Mouse ADB	74
INP0163	A3 Mouse	85
INP0199	A3 Trackball	75
Sophisticated Circuits		
ACC035	Power Key w/Quickkeys Lite	64
Wacom		
INP0179	Digitizing Tablet 6" x 9"	589

UPGRADES & ACCELERATORS

Connectix		
UTI0209	MAXIMA 2.0	45
UTI0385	MC73	159
UTI0144	Virtual 030 2.0 VM3	113
DRI0185	Virtual 2.0 PMMU	188
DayStar Digital		
PowerCache 33 MHz	729	
PowerCache 33 MHz w/882	999	
PowerCache 40 MHz	949	
PowerCache 40 MHz w/882	1199	
PowerCache 50 MHz	1459	
PowerCache 50 MHz w/882	1799	

DRIO224 FastCache Ilicl 279

DRIO416	RAM PowerCard	499
---------	---------------	-----

Total Systems

DRIO361	Gemini & Gemini Classic (Full line available)	1079
DRIO366	Gemini Classic 20MHz 68030/68852	1599
DRIO364	Gemini Classic 40MHz 68030	1499
DRIO297	Gemini Classic 33MHz 68030	365

Mercury 16MHz 68030 - SE

MODEMS & FAX

Abaton		
MCD0034	InterFax 24/96	299
Dove		
MCD0053	Dove Fax Plus VOICE	349
Hayes		
MCD0060	Personal Modem 2400 Plus w/Smartcom	149
MCD0065	Bundle 9600 ULTRA SmartModem	829
PowerUser™		
MCD0062	24/96 Mini Send/Receive Fax Modem	199
MCD0043	2400 Mini Modem	99
MCD0047	Mini Send Fax 2400/9600	149
MCD0007	19600 bps V.32&V.42bis Modem	399
MCD0070	2400 bps V.42bis Mini Modem	149
Prometheus		
MCD0076	ProModem 2496 S/R Minilink Plus	279
MCD0068	ProModem 2400 Mini Plus	149

UTILITIES & PROGRAMMING

Abbott Systems, Inc.		
UTI0235	Calc+	39
UTI0113	CanOpener	62
Alysis		
UTI0232	SuperDisk 1.7	49
ASD Software, Inc.		
UTI0135	FileGuard 2.7	139
UTI0130	FileGuard 2.7 - Office Pack 5	499
UTI0131	FileGuard 2.7 - Office Pack 10	799
Baseline Publishing		
UTI0183	ScreenShot 1.2	34
Berkeley System Design		
UTI0119	After Dark 2.0	29
UTI0231	More After Dark/ After Dark 2.0 Bundle	44
CE Software		
UTI0188	Quickkeys 2 v.2.1	94
Connectix		
UTI0148	HAND-Off II 2.2.1	56
Fifth Generation Systems		
UTI0087	SuitCase II 1.2	55
Insight Development		
LNG0095	MacPrint 1.2	95
Kensington		
	PassProof	ea 69
Microcom		
UTI0191	911	89
UTI0233	Citadel	89
UTI0093	Virex 3.5	59
Salient		
UTI0179	DiskDauber 3.7	49
Symantec Corporation		
UTI0151	Norton Utilities for the Mac 1.1	87
UTI0214	Symantec Antivirus for Mac 3.0 (SAM)	65
UTI0241	Symantec Utilities for Mac 2.1 (SUM)	99
LNG0051	THINK C 5.0	199

The PowerUser Hard Drive from MacWarehouse

MACWAREHOUSE TAKES THE HARD WORK OUT OF BUYING A HARD DRIVE.

The PowerUser Hard Drive is loaded with all the features you'd expect from a top quality drive. It's made for MacWAREHOUSE by a leading manufacturer - to our exacting specification. Its superior design fits right under the Mac Plus, Classic or SE, bringing the screen up to a convenient height.

STATE-OF-THE-ART COMPONENTS.

The PowerUser Drive is packed with quality components. There's a rear panel SCSI address

drive includes the popular "Disk Manager Mac" software by On Track, and is pre-formatted - ready to use right out of the box. Each unit goes through quality control and testing before it leaves the factory. The comprehensive "User Manual" includes all the necessary step-by-step instructions.

THIRTY-DAY MONEY BACK GUARANTEE.

Try the PowerUser Hard Drive for thirty days, and if you're not completely satisfied, call us for an RMA number and return it with all of its documentation for a full refund.



Low cost expandability

PowerUser 44MB Removable

Here's the solution for people who have changing storage needs. Whenever you need more space, just add another economical 44MB cartridge. The PowerUser 44MB Removable contains the industry-standard Syquest mechanism. Manufacturer's 1-year warranty. Price includes one cartridge.

DRI 0206

Manufacturer: PowerUser

\$589

selector switch, two 50-pin SCSI connectors, and removable internal SCSI terminators. Each

The PowerUser Hard Drive is covered by a one year manufacturers warranty and, if you do ever have a problem, the MacWAREHOUSE loaner drive program guarantees you'll never be without a drive for more than a few hours.

20MB Hard Drive . . . \$329	80MB Hard Drive . . . \$449
40MB Hard Drive . . . \$349	100MB Hard Drive . . . \$499
60MB Hard Drive . . . \$399	200MB Hard Drive . . . \$899

Each unit goes through quality control and testing before it leaves the factory. The comprehensive "User Manual" includes all the necessary step-by-step instructions.

1-800-255-6227







Overnight Delivery only \$3.00

Call 24 hours a day, 7 days a week
© 1992 Micro Warehouse Inc.


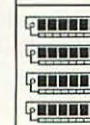



Tomorrow's Upgrade For Your Mac Is Only \$49*

A MacWarehouse Expansion Kit will dramatically increase the power of your Mac. And our fast, reliable overnight service will have your kit in your hands tomorrow!




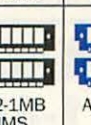

(Ask for item # CHP0012 120N5)

	STANDARD	FOR 2MB	FOR 2.5MB	FOR 4MB
	 1MB SURFACE MOUNT	 ADD A 1MB EXPANSION CARD	 ADD A 1MB CARD & 2.56K SIMMS	 ADD A 1MB CARD & 2.1MB SIMMS  OR ADD A 3MB EXPANSION CARD
MACINTOSH CLASSIC				


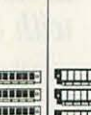
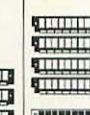






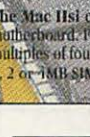
The Mac Classic comes with a standard 1MB of memory, which is surface mounted (soldered) to the motherboard. Additional memory for your Mac Classic is provided by an Expansion Board, which slides into a slot on the Classic's motherboard. The Expansion Board can be purchased with 1MB of memory (for a total of 2MB), and then two 1MB SIMMs can be added to the Expansion Board later for a total of 4MB. Or, you can install a 3MB Expansion Board, which brings your Mac Classic up to its full 4MB.

	STANDARD	FOR 2MB	FOR 2.5MB	FOR 4MB
	 4-256K SIMMS	 ADD 2-1MB SIMMS	 ADD 2-1MB SIMMS & 2-256K SIMMS	 ADD 4-1MB SIMMS
MACINTOSH PLUS & SE				


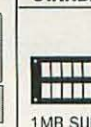
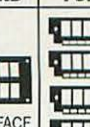


The Mac Plus and Mac SE have four available slots on the motherboard, which originally contain four 256K SIMMs modules - totalling 1 megabyte (1MB) of memory. To upgrade, you can replace each 256K module with a 1MB module, but you must do this in pairs. Replace two 256K modules and you will have a total of 2.5MB of memory. (That's the two new 1MB modules plus the original two 256K modules.) Replace all four modules and you'll have 4MB. (You should save the 256K modules for later use if you want to pass your Mac on to someone else.)

	STANDARD	FOR 4MB	FOR 6MB	FOR 10MB
	 2MB SURFACE MOUNT	 ADD 2-1MB SIMMS	 ADD 2-2MB SIMMS	 ADD 4-4MB SIMMS
MACINTOSH LC				

The Mac SE/30, II, IIx, IIcx, and IIfx each come with a total of eight slots. The standard configuration has four 256K SIMMs modules, or a total of 1 MB. Here, memory must be upgraded in multiples of four. This allows for expansion from 1MB to 4, 5 or 8MB on the II and IIx, and up to 32MB on the SE/30, IIcx and IIfx, depending on whether you are using 1MB, 2MB or 4MB SIMMs. If you are upgrading a Mac IIfx, you must use SIMMs rated at 80ns or faster.

	STANDARD	FOR 4MB	FOR 5MB	FOR 8MB	FOR 9MB (IIfx only)	FOR 16MB (IIfx only)	FOR 32MB
	 4-256K SIMMS	 ADD 4-1MB SIMMS	 ADD 4-1MB SIMMS & 4-256K SIMMS	 ADD 8-1MB SIMMS	 ADD 4-2MB SIMMS & 4-256K SIMMS	 ADD 8-2MB SIMMS	 ADD 8-4MB SIMMS
							
							

The Mac IIfx comes with a standard 1MB of memory, which is surface mounted (soldered) to the motherboard. Four slots are available for additional memory, and you must upgrade your Mac IIfx in multiples of four. The Mac IIfx is expandable to 5, 9 or 17MB, depending on whether you are using 1, 2 or 4MB SIMMs, and the SIMMs modules must be rated at 100ns or faster.

	STANDARD	FOR 5MB	FOR 9MB	FOR 17MB
	 1MB SURFACE MOUNT	 ADD 4-1MB SIMMS	 ADD 4-2MB SIMMS	 ADD 4-4MB SIMMS
MACINTOSH IIfx				

The Mac LC comes with a standard 2MB of memory, surface mounted (soldered) to the motherboard, with two slots available for additional memory. The Mac LC can be upgraded to 4, 6, or 10 MB, depending on whether you are installing 1, 2 or 4MB SIMMs.

**FREE STEP-BY-STEP
VIDEO INSTRUCTIONS****

Ask for item #AAA0004 and receive our FREE* video when you purchase two or more SIMMS modules.

**Mac
WAREHOUSE**

The world's #1 spreadsheet comes to the Mac!

Lotus 1-2-3 for the Macintosh Only \$329

It's the Lotus 1-2-3 you can't live without, now on the Macintosh you've grown to love. With all the great Macintosh features you've been waiting for: Multiple windows. Graphical interface. Pull-down menus with mouse support. Plus extensive use of all the new System 7.0 capabilities, including Virtual Memory (for large spreadsheet models), Publish & Subscribe (for instant updates of spreadsheet data and graphs), and Apple Events (for using other software while working inside 1-2-3).

A unified workspace you can customize

The first thing you'll appreciate about Lotus 1-2-3 Mac is the way everything is kept together in a single file. Spreadsheet data, text blocks, graphs, drawn objects, and macros all stay together and are available whenever you open the document. Tear-off menus put formatting, graphing and drawing tools at your fingertips, anywhere on the screen. And you can customize Lotus 1-2-3 Mac by adding your most frequently used formats, styles, and macros right to the on-screen menus.

Create impressive layouts effortlessly

Once you've collected all your data and analyzed it, you probably need a meaningful way

to explain it to other people. Lotus 1-2-3 Mac makes that whole process easier than ever. You can move elements around to create a layout that will make the data — and your analysis — crystal clear. Re-size and re-format graphs. Restructure drawn objects and text blocks. Add copy to explain key elements or draw conclusions. Draw circles and arrows, or create illustrations with the drawing tools. With Lotus 1-2-3 Mac, you'll have all the tools you need to be sure your important points don't get lost in the numbers.

Edit data right within the cell

If you're like most spreadsheet users, it probably takes you a minute to remember that you need to be on the command line when you enter or edit data. With 1-2-3 Mac, that's never a problem. You can click on a cell and make the changes directly and immediately, right within the cell. This easy, natural way to work with data, text, and formulas makes everyday use of Lotus 1-2-3 Mac easier and more efficient than ever before.

Break the time barrier with 3-D worksheets

Why jump through hoops to compare last month's data with the current month, or with the projections for next month? Just use the true 3D stacking capability of Lotus 1-2-3 Mac. This



unique feature not only lets you compare results, but also enables you to perform calculations up and down the stack. You'll find this capability a great time saver, especially when you're building a business plan extending over a long period of time, or consolidating spreadsheets.

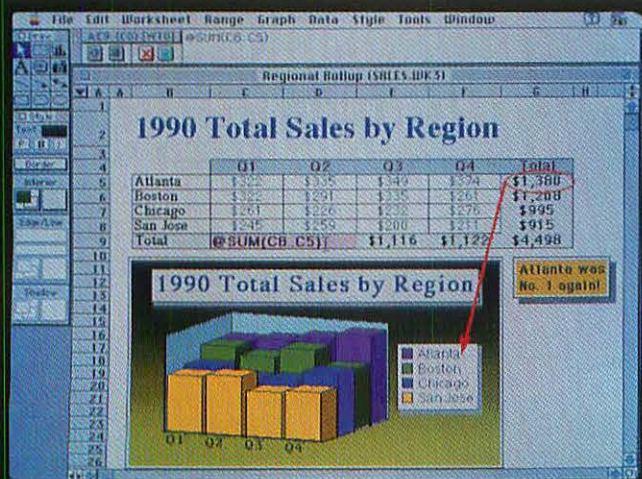
Easy access to remote databases

Do you need to download data from a database on a mainframe or minicomputer? Lotus DataLens technology and Apple Data Access Language work together to let you query remote databases as if they resided in your worksheet. So you'll spend your time analyzing and making informed decisions from your data, instead of trying to gain access to it.

"Classic" 1-2-3 commands at your fingertips

You'll feel comfortable using Lotus 1-2-3 Mac, no matter what spreadsheet experience you have. Lotus 1-2-3 Mac takes full advantage of the intuitive Mac interface to make using its spreadsheet, graphing and communications capabilities a breeze. If you learned 1-2-3 on a different platform, you can use the Classic Menu to access all the commands you already know with the press of the slash key. Plus Lotus 1-2-3 Mac is compatible across platforms, and offers full network support.

With Lotus 1-2-3 for the Macintosh, you have control over a wide variety of graph types (including 3-D), with hundreds of colors, borders, drawing tools and text styles to make your work look its best.



BUS 0188 FaxFACTS 1597
Publisher: Lotus Development Corp.
Suggested Retail: \$495

\$329

Get Lotus 1-2-3 for only \$99!
Attention Excel, WingZ and Resolve owners —
Call for competitive upgrade details!

MacWAREHOUSE®
1-800-255-6227
Overnight Delivery Only \$3.00!

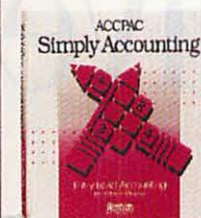
Call 24 hours a day, 7 days a week

© 1992 Micro Warehouse Inc.

See us at Macworld Expo Booth# 5131, Brooks Hall

Some People Are Born Accountants. For The Rest Of Us, There's New ACCPAC Simply Accounting.

Easy To Learn, Easy To Use And Only \$199.



Now there's an accounting program anybody can use—new ACCPAC® Simply Accounting™, the quickest and easi-

est way to take care of your books.

You'll have it up and running in minutes. And you can do anything with just a few clicks of the mouse. Write a check. Print out an invoice. Do your payroll. Manage your receivables.

What used to take hours now takes just minutes. So you can spend less time counting your money—and more time making it.



And since it costs only \$199, you can take care of your books without breaking the bank.

Call us today at 1-800-531-5236 in the U.S. or 1-800-663-6904 in Canada for the location of your nearest dealer.

It's the accounting program anybody can use.

And we mean anybody.



For Only \$199 You'll Get: • General Ledger • Accounts Payable • Accounts Receivable • Payroll • Inventory Control • Job Costing • Prints Checks, Statements, Invoices and Mailing Labels • Produces Standard Accounting Reports • Quick Set-Up

©1991 Computer Associates International, Inc., 711 Stewart Avenue, Garden City, NY 11530-4787. All trade names referenced are the trademarks or registered trademarks of their respective companies.

Circle 10 on reader service card

Desktop Publishing Diversifies

TODAY'S
PUBLISHING
PROGRAMS

SATISFY
PROFESSIONALS

AND

NOVICES

ALIKE

BY JIM HEID

IF FREEDOM OF THE PRESS belongs to those who own one, as the saying goes, then a lot of people have been buying into the First Amendment. If you're about to join them, you'll probably start by investigating the two programs most people associate with desktop publishing: Aldus PageMaker and Quark's QuarkXPress.

But the market is growing, and you owe it to yourself to check out the rest of it. If you're new to publishing or on a tight budget, you might find an entry-level program appealing. Besides streamlining the publishing process, programs such as Aldus Personal Press and Timeworks' Publish It Easy retail for about half of what more sophisticated programs cost.

For book and technical publishing, there are new versions of the so-called long-document programs: Ventura Publisher, Macintosh Edition, and Frame Technology's FrameMaker. The latter allows you to create "smart" documents that can change and update themselves—Johannes Gutenberg meets Buck Rogers.

To pick the right program, first determine the types of publications you will create. Brochures and menus, newsletters, books, scientific papers, advertisements—every piece has its demands, and some programs meet them better than others. Next, consider your hardware. Low-end packages run on Mac Classics, SEs, and Pluses, but most other programs

crawl on them. Finally, consider yourself—your design and layout skills and the extent to which you want to immerse yourself in publishing minutiae.

Points of Comparison

IT'S ALSO IMPORTANT TO ASSESS HOW the programs you're considering approach desktop publishing. The most basic point of comparison concerns the way you position text and graphics on the page. Two schemes predominate: the on-the-fly, import-and-place scheme exemplified by PageMaker; and the draw-a-frame-and-then-import approach of QuarkXPress and most other programs. Some designers find the former approach preferable for experimenting with layouts—it is also more akin to the way a layout artist works. A frame-oriented scheme lends itself to periodicals, books, and manuals, where consistency and planning are paramount. Most programs also let you type position values in a dialog box—handy for precise positioning.

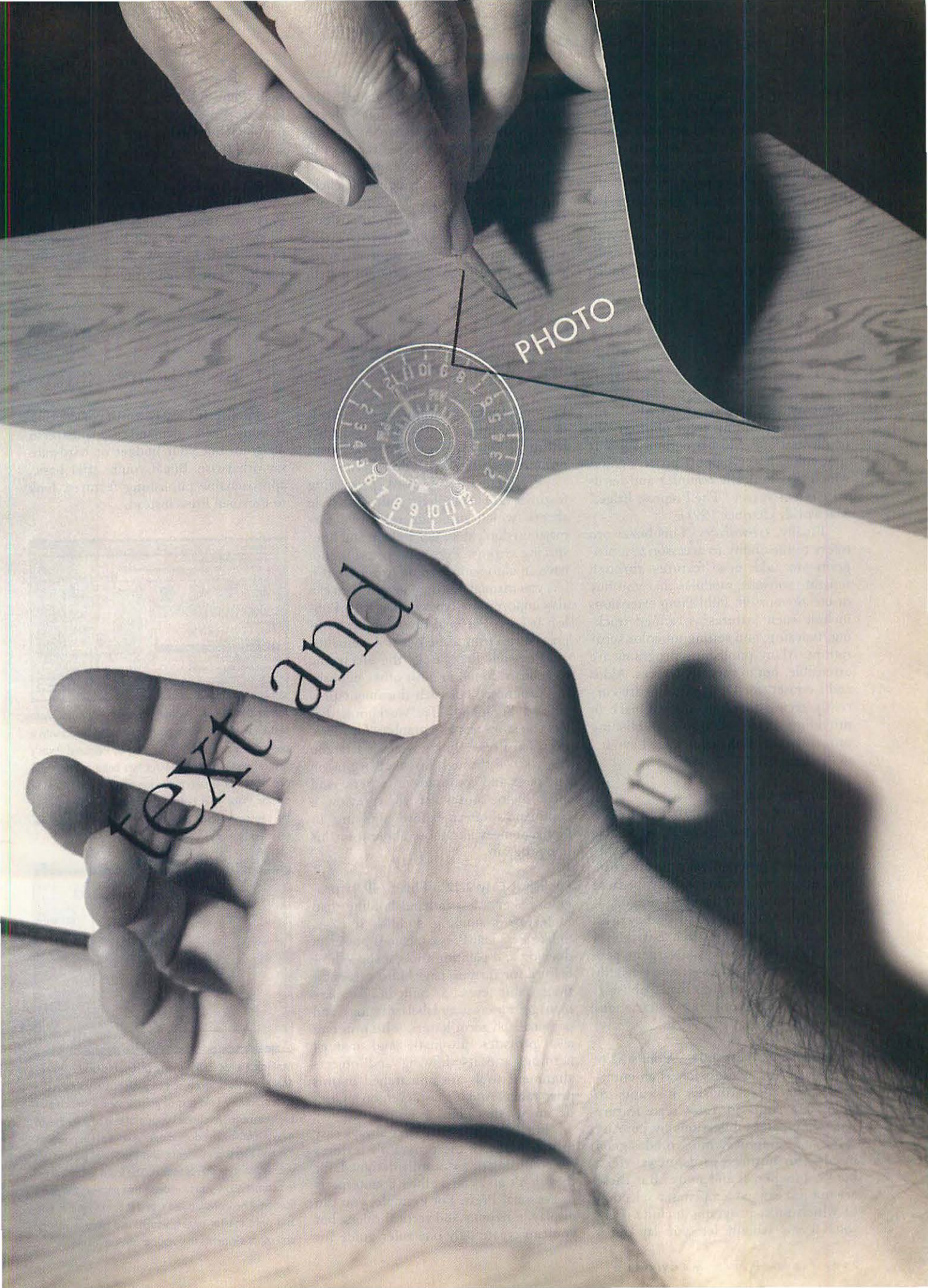
Some programs add word processing, drawing, and painting features, saving you from the expense of additional software and from having to endure the chore of importing elements created in other programs. But the features in these do-all programs rarely match those of stand-alone equivalents—and when they do, only a fast Mac with lots of memory can accommodate them.

All publishing programs can import files from word processors and graphics

programs, but some do a more thorough job of it—or recognize a wider variety of documents—than others. The ability to export text files from a publication allows you to update word processing files to reflect last-minute edits made on the layout.

Most publishing programs allow you to create documents with hundreds of pages (although it's smart to divide tomes into more manageable chunks). Other programs limit document length to available memory or storage space. In a similar vein, some publishing programs, including PageMaker, can open only one document at a time. That means more work when you want to reuse elements from other publications.

A publishing program is also a typesetting program. Nearly all publishing programs let you manually kern—adjust the spacing between characters to improve the look of headlines and other text. Most also offer automatic kerning features that tighten such obvious candidates as *To* and *AW*. But precision



PHOTO

text and

varies: costlier programs provide finer kerning than low-end ones. You also pay more for *tracking*, a feature that adjusts word spacing and letterspacing based on type size; and for *justification* controls, which enable you to precisely adjust the spacing of text aligned against the left and right margins.

Then there's color in its two varieties: *spot color*, in which color is usually used to set off rules, headings, or similar

publication within the AutoCreate dialog box by assigning text and graphics files to a template's elements (see "Automatic Layout"). I would like to see that sort of innovation in costlier programs.

Personal Press is no slouch at click-and-drag layout, either. You can use on-screen guides or dialog boxes to position and size elements. You can rotate text and graphics in single-degree increments—a feat PageMaker cannot match.

each. Publish It Easy supports fewer file formats than does Personal Press and has problems importing and printing gray-scale TIFF files unless you allocate roughly 2MB of memory to the program. Its gray-scale modification features also fall short of those offered by Personal Press. And Publish It Easy crashes every now and then. (Personal Press 1.0 also had some gnats, but version 1.01 performed well for me.)

TO PICK THE RIGHT PROGRAM, DETERMINE THE TYPES OF PUBLICATIONS YOU WILL CREATE, THEN CONSIDER YOUR OWN DESIGN SKILLS

elements; and *process color*, which involves incorporating color photographs or illustrations. Most programs support spot color; fewer support process color, which is technically complex and hardware intensive (see "The Prepress Edge," Macworld, October 1991).

Finally, *extensibility*. This buzzword refers to the ability to accessorize a program—to add new features through separate software modules that you buy or create yourself. Publishing extensions include such features as refined tracking, indexing, and setting up color separations. Many publishing programs are extensible, but to varying degrees. Aldus and Letraset (for DesignStudio) are currently trying to catch up to Quark in providing more malleable publishing programs (see "Enhancing Page Layout," in this issue).

Taking the Low Road

IF YOU WANT TO AVOID LEARNING publishing arcana; if you have a Mac Classic, Plus, or SE; or if you can't justify a costlier program, take the low road. But choose your route carefully, because the top contenders in this category—Aldus Personal Press and Timeworks' Publish It Easy—approach entry-level publishing from widely divergent perspectives. Personal Press is more elegantly designed, but it does less than Publish It Easy. You must choose between friendliness and features.

Aldus Personal Press 1.01 Aldus's \$299 Personal Press takes its job as an entry-level program seriously; it wants to hold your hand. An AutoCreate feature lets you create publications by pouring text and graphics into predesigned molds—for business cards, newsletters, books, brochures, and more. But these are not just canned templates, a selection of which most programs include. Personal Press actually lets you lay out a

Personal Press can also alter gray levels in scanned images and print high-quality halftones on low-cost, non-PostScript printers such as Apple's StyleWriter.

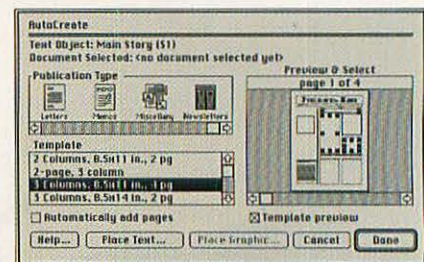
Personal Press's word processing features are complete, but its style sheets (which automate repetitive formatting) don't store tab, indent, and line-spacing settings. Personal Press does not have an automatic kerning feature, but it lets you manually kern. The program can also import more types of files than Publish It Easy. Personal Press can even import stories from PageMaker documents.

Personal Press lacks the electronic pasteboard found in most other publishing programs, but each document provides a Scrapbook-like workbook that lets you store text and graphics for reuse. Personal Press's link navigator lets you easily scroll through text that begins on one page and continues on others. And most dialog boxes let you preview a command's effect before applying it. Conveniences like those abound in this fine program.

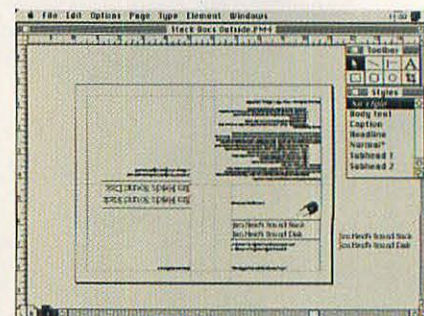
Publish It Easy 2.12 This \$249.95 program believes less in hand-holding than in feature cramming. Publish It Easy, unlike Personal Press, includes powerful drawing and painting tools; a slide-show feature for turning pages into presentations; and even a built-in database manager for creating labels, catalogs, and personalized form letters. The program also provides automatic and manual kerning, and its drawing and object-alignment tools are unmatched in this price range. And it's fast, even on a Classic, an SE, or a Plus.

But Publish It Easy isn't always easy to use. Many of the program's features are confusing or awkwardly designed. Or they don't go as far as their counterparts in Personal Press. For example, you can display horizontal and vertical rulers, but you can create only one ruler guide for

Publish It Easy is worth considering if your needs demand a mainstream program but your budget or hardware say otherwise. But if you're after basic, approachable publishing features, look to Personal Press instead.



Automatic Layout Aldus Personal Press's AutoCreate feature lets you quickly pour text and graphics into a predefined template. Here, one of Personal Press's several newsletter templates has been opened and one of its stories selected in the preview box. Clicking on the Place Text button and then choosing a text file causes Personal Press to import the text into the selected blocks.



Making Pages Like many programs, Aldus PageMaker provides an on-screen pasteboard you can use to temporarily hold text or graphic items—much as a paste-up artist might tack a strip of text to the edge of a layout table. The dotted ruler guides aid in positioning and aligning elements, and the Styles palette lets you assign style sheets to text. The icons in the lower-left corner allow you to access other pages in the publication. The icons labeled L and R correspond to left and right master pages, which hold page numbers and other elements that appear on each page.

ReadySetGo 4.5a ReadySetGo used to be Letraset's flagship, but when the firm released DesignStudio, it recast ReadySetGo as a dinghy, lowering its price to \$295. ReadySetGo does provide some advanced features missing from other programs in its price range—a glossary for entering often-used text, relatively fine kerning, style sheets that include tabs and paragraph formatting, and a thumbnail window that lets you reorganize pages by dragging them.

But ReadySetGo cannot directly import files from WordPerfect for the Macintosh 2.0 and Microsoft Word 4.0. (You can import Word 4.0 files by saving them in Word 3.0 format.) And only nostalgia buffs will enjoy the manuals' references to the Mac 512K. ReadySetGo is an ideal dinghy if your ultimate destination is the DesignStudio flagship—they work similarly, and DesignStudio can convert ReadySetGo documents. If not, think twice.

MaxPage 1.2 MinPage would be a better name for this \$89 bare-bones program. It can't kern or even justify type, publications are limited to a single page, the Undo command doesn't work, and the program has an amateurish feel to it. It does run on a 512K Mac. MaxPage needs a face-lift and more features. I can't recommend it. Version 2.0, which should be shipping when you read this, will sport an improved interface and drawing tools, but still won't justify text.

In the Mainstream

IF ENTRY-LEVEL PROGRAMS ARE FOR publishing apprentices, then PageMaker, QuarkXPress, and DesignStudio are for experts. Although these programs pack some word processing punch, they aren't jacks-of-all-trades, but production tools. All three offer excellent type- and image-adjustment features, precise layout and positioning aids, and support for both spot and process color. (A separate program, such as Aldus PrePrint, is required to color-separate PageMaker files; PrePrint is bundled with PageMaker.) All three also support tracking. Nevertheless, the differences between the top two picks, PageMaker and QuarkXPress, are significant.

PageMaker 4.01 PageMaker (\$795) puts designers in familiar territory, thanks to an on-screen pasteboard and the way the program lets you attach text and graphics without first drawing frames (see "Making Pages").

You can create top-notch type with either program—if you have patience and a typographer's eye. But Page-

Page-Layout Lineup

Products are ranked within each category.

ENTRY-LEVEL PROGRAMS

Aldus Personal Press 1.01 \$299 Personal Press does what a low-end publishing program should: it streamlines publishing for nonpublishers. Even pros may use its AutoCreate feature to automate production of documents whose type doesn't demand finesse. It's also extensible with file import/export modules and scanner drivers.

Timeworks Publish It Easy 2.12 \$249.95 Fast even on the slowest Macs, Publish It Easy sports an everything-including-the-kitchen-sink mix of features that may eliminate having to buy a separate drawing or even database program. But some bugs, incomplete features, and daunting complexity mar this otherwise versatile program.

Letraset USA ReadySetGo \$295 Travel back in time to see what page layout was like in 1988. ReadySetGo's ease of use and strong typography are offset by outdated manuals and the inability to import today's popular file formats.

Applied Systems and Technologies MaxPage 1.2 \$89 The world could use an under-\$100 page-layout program, but this one isn't it. MaxPage is poorly designed and lean on features—even for its price.

MAINSTREAM PROGRAMS

Aldus PageMaker 4.01 \$795 The best typography in its class, solid printing and bookmaking features, and an elegant interface combine to make PageMaker the best all-around mainstream package. Version 4.2 (which should be available when this appears) will add long-overdue extensibility and keyboard positioning and sizing—but will still be limited to one open document at a time.

Quark QuarkXPress 3.0 \$795 QuarkXPress is the program of choice for producing pieces requiring rotated elements or spreads of more than two pages. Sophisticated extensions are available for high-volume production. Publishing acrophobes need not apply—the learning curve is steep—but pros will find power aplenty at the summit.

Letraset USA DesignStudio 2.0 \$795 Mainstream publishing's also-ran, DesignStudio is strong on typography but weak on layout conveniences. Style sheets don't work as they do in most programs, and the interface could use a lift. The program has the hooks to allow for powerful extensions, but to date, only Letraset has produced any.

LONG-DOCUMENT PROGRAMS

Frame Technology FrameMaker 3.0 \$795 Powerful and well designed, FrameMaker is the best choice for scientific and technical publishing. Version 3.0 has a fine table editor, allows manual kerning, and can import and print color images in the Desktop Color Separation format. But its power demands commitment—and a Mac II-class machine.

Ventura Software Ventura Publisher, Macintosh Edition 3.2 \$795 Ventura's technique of linking publications to their original text and graphics files means the source files are always up-to-date. The program is a good choice if you already use Ventura on IBM PCs, but Mac veterans will have to adjust to many idiosyncrasies and should consider FrameMaker instead.

Maker's type controls edge out those provided by QuarkXPress. PageMaker provides five automatic tracking levels versus QuarkXPress's one, giving you easier command of character spacing.

Unlike QuarkXPress, PageMaker doesn't let you edit its kern tracks (you can with third-party software), but it does include well-crafted tracks for 35 PostScript fonts—QuarkXPress doesn't. As for manual kerning, PageMaker offers less precision than QuarkXPress, but the differences show up only in very large type sizes printed on high-resolution imagesetters. Also, QuarkXPress does not let you disable automatic kerning for individual paragraphs; PageMaker does, and lets you control it through style sheets. That is ideal when you want to

automatically kern text in some fonts or elements but not others. PageMaker's ranked hyphenation scheme also allows for better automatic hyphenation, although PageMaker doesn't allow as much control over hyphenation.

Although QuarkXPress's frame approach lends itself to structured documents, PageMaker remains the better program for producing books and manuals, thanks in part to its ability to link separate documents and generate a table of contents and index that spans the group. (Indeed, PageMaker's indexing features are among the best anywhere.) PageMaker's unique word processor—like story editor lets you edit without weaving through a publication's pages. PageMaker also provides a better system of

managing the links between a publication file and the text and graphics files you import into it. That simplifies updating publications when their source files change, and simplifies sending publications to imagesetting service bureaus. *Macworld's* production department has encountered problems with linked PICT and MacPaint format graphics—they occasionally disappear when publications are sent to a publishing service bureau for imagesetting. But at this writing, we don't know whether the problem lies in PageMaker or in Aldus PrePrint.

PageMaker's printing features, manual, and online help also beat their QuarkXPress equivalents. And PageMaker is more reliable than QuarkXPress, thanks in part to its minisave feature, which automatically saves the page you're working on when you switch to another page. PageMaker also supports many popular IBM PC file formats, and is itself available for the PC. (A PC version of QuarkXPress is in the works.)

PageMaker 4.2, which should be available by the time you read this, will allow you to position and resize elements by typing values, as well as fine-tune element positions using the keyboard's arrow keys—conveniences QuarkXPress users have enjoyed for years. Version 4.2, like QuarkXPress 3.1 (due to ship by the time you read this), also will support the subscribe feature of Apple's System 7 software. PageMaker 4.2 will also incorporate the Aldus Additions extension technology and include six add-ons.

QuarkXPress 3.0 QuarkXPress may fall short of PageMaker in some areas of typography and publication management, but it offers many more features for manipulating type and page elements. Some examples: QuarkXPress lets you open numerous documents simultaneously and even drag elements from one to another. It lets you rotate text in .001-degree, not just 90-degree, increments. It lets you rotate graphics, and a library feature lets you save and reuse elements with a mouse click (see "Layout Librarian").

QuarkXPress allows spreads of more than two pages, can cope with rules and boxes of virtually any weight, and lets you apply tints to spot color. Its indent-to-here keyboard shortcut makes short the work of aligning numbered or bulleted lists. The program lets you lock elements against being moved or modified. Its Step and Repeat command simplifies creating forms and other structured pages.

QuarkXPress also has the lead where extensibility is concerned. Aldus can

point to a handful of developers that have announced additions, but Quark can show you a catalog of dozens of extensions available now.

QuarkXPress 3.1 will be easier to use than earlier versions, but the program's labyrinth of features, preference settings, and document setup options can still be daunting. PageMaker—my favorite, but by a small margin—is easier to learn and generally feels smoother, if slower. Many publishing professionals buy both programs and apply each one's strengths to the appropriate jobs.

DesignStudio 2.0 There's a lot to like in DesignStudio (\$795), starting with fine type: three tracking levels with editable tracks; paragraph-level automatic kerning; tabs that have not only starting points, but widths as well, making it easier to create specialized tables; and a unique Professional-rag option that creates attractively undulating ragged margins.

As for layout, DesignStudio uses frames similar to QuarkXPress's and allows you to position and resize items using the keyboard or mouse. The program can also display a customizable row-and-column grid, but oddly, does not let you display the grid and ruler guides simultaneously.

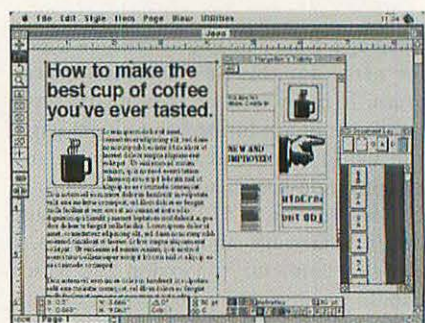
DesignStudio has many such blemishes. It doesn't provide adequate feedback when you're linking text frames. There's no ruler for setting paragraph indents; you must type values in a dialog box. It lacks its competitors' convenient floating windows for assigning colors and styles and for sizing and positioning elements. And its approach to style sheets is annoying—you can't apply a style to already-formatted type without losing the previous formatting, and you can't format styled type without first removing the style. And many aspects of the program are rough around the edges. DesignStudio is a promising program, but Letraset needs to revamp the style sheets and polish the interface.

Letraset is currently working on a maintenance upgrade, tentatively called version 2.5, that adds System 7 support, including TrueType support, a Subscribe command, balloon help, and support for AppleEvents. The new version will also be able to print to non-PostScript printers (version 2.0 doesn't), and will, according to Letraset, run faster and use memory more efficiently. It will also support Apple's QuickTime and will be able to play back QuickTime movies located on pasteboard—Johannes Gutenberg meets Max Headroom. The update is scheduled to be available in the first quarter of 1992.

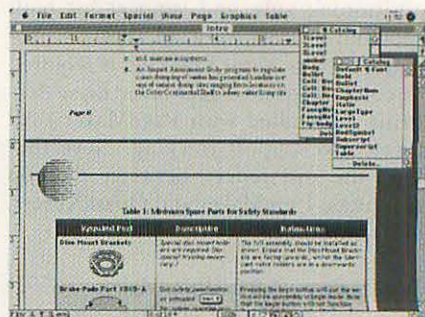
When the Going Gets Long

LONG-DOCUMENT PROGRAMS ARE DESIGNED for publishing books and manuals, especially for technical or scientific subjects. Such programs can generate tables of contents, indexes, lists of figures, footnotes, and tables; and can automatically update page numbers in cross-references as a document's page breaks change (as in "see 'word' on page 2"). They can place vertical bars alongside text that has been edited since the last revision, aiding in the document-review process. They have built-in equation editors, table editors, and drawing tools.

FrameMaker also lets you create electronic publications with HyperCard-like on-screen hot spots where you click to display more information or jump to other sections. Interleaf Corporation's Interleaf Publisher 5.0 is scheduled to ship in mid-1992 and includes a programming language that enables docu-



Layout Librarian QuarkXPress's innovative library feature lets you store and recall often-used text or graphics. Retrieving an element from the library is a simple matter of dragging it from the library window (here called Maryellen's Tidbits) onto the page. Also visible here is QuarkXPress's Document Layout palette, which lets you rearrange and quickly access a publication's pages. The measurements palette at bottom displays information about the selected element and lets you conveniently modify its position, text, and other attributes.



The FrameMaker Way FrameMaker lets you automate document construction by predefining character and paragraph formats, and then using the catalog palettes to assign formats. The document at top shows an automatically numbered (here, lettered) list and a table created with FrameMaker's table editor. FrameMaker's drawing tools created the table's graphics.

ments to tailor themselves to the need at hand. For example, an on-screen service manual might show different troubleshooting diagrams depending on the problem reported by a diagnostic device.

Long-document programs require more planning and setup time than do other publishing programs, as well as a department- or company-wide commitment to their structured approach. But if you make the effort, these programs let you create and update large, complex publications with an ease other programs don't provide.

The top program in this group—FrameMaker—wraps its power within an approachable interface backed by excellent documentation. (Interleaf 5.0 will offer some features FrameMaker lacks, including built-in graphing, publish and subscribe support, and active-document architecture. Interleaf Publisher 3.6 is available but does not offer a standard Mac interface and is better suited for workstations. I don't recommend it.)

FrameMaker 3.0 In FrameMaker, a designer or production artist first creates a template describing a document's appearance and containing style sheets (called formats) for character and paragraph formatting. The style sheets go well beyond those of popular word processors, incorporating such details as whether paragraphs should be numbered or bulleted according to one of dozens of schemes.

Then, writers use FrameMaker to write the publication, choosing the predefined styles from palettes and adding index and table-of-contents entries, cross-references, equations, and the like, as they work (see "The FrameMaker Way"). Meanwhile, artists might use FrameMaker's drawing tools to create technical illustrations or diagrams. Revisions are easier because there are no separate word processing and graphics files to modify and import. All this occurs on a network (and one that may encompass high-end workstations for which FrameMaker is also available) that allows people to collaborate on publications stored on a central file server.

FrameMaker 3.0 addresses many of version 2.1's shortcomings. FrameMaker now sports a powerful table editor, it imports Microsoft Word style sheets more accurately, and it can import text into an existing document. FrameMaker now offers manual kerning and can import and print color images in the Desktop Color Separation format.

Version 3.0 adds a powerful new formatting attribute called *conditional text*. This lets you create different versions of a document from a single base

document—for example, domestic and international versions of a catalog with price and shipping information for each, or student and teacher versions of a textbook. FrameMaker lacks some of the space-age features Interleaf Publisher will offer when it releases version 5.0, but its conditional text and hypertext links make it a powerful electronic publishing tool. It's a superb program.

Ventura Publisher, Macintosh Edition

3.0.1 With Ventura, instead of importing text and graphics into a publication, you establish links between the publication file and original text and graphics documents. When you change those original files, the publication is updated. Therefore, Ventura doesn't need the heavy-duty word processing and drawing features of FrameMaker and Interleaf Publisher. Ventura also lacks conditional text and hypertext features, although it provides excellent table and equation editors and better typographic controls than its competitors. Ventura 3.2, due out by the time you read this, adds support for Apple's System 7, including publish and subscribe commands.

Ventura began life on IBM PCs, and that heritage shows up in the Mac version. Many things don't work the way a Mac veteran would expect them to, and that can be frustrating. But its PC heritage means Ventura supports numerous PC text and graphics file formats, and it can swap publications with its PC counterpart. Offices already using Ventura on PCs might consider the Mac version; otherwise, I recommend FrameMaker.

Other Choices

PUBLISHING FEATURES ARE SURFACING in many programs, and depending on your needs, the best program for publishing might not be a publishing program. If fine type control and support for a wide range of graphics formats aren't important, you might consider a word processor or integrated package. Numerous word processors let you draw and import graphics and create multicolumn layouts (see "Write—or Wrong?", *Macworld*, September 1991). Integrated programs such as Microsoft Works, Symantec's GreatWorks, Beagle Bros' BeagleWorks, RagTime USA's RagTime Classic and RagTime III, and Claris's ClarisWorks have the convenience edge if you're creating reports containing information from a spreadsheet or database. (At this writing, only Microsoft Works and the RagTime series are shipping.)

And illustration programs such as Aldus FreeHand and Adobe Illustrator

MW

EDITORS' CHOICE

Entry-Level Program

Personal Press This program is easy to use, yet offers a wide array of features, including automatically creating documents within preset templates. **Company:** Aldus Corporation. **List price:** \$299.

Mainstream Program

PageMaker In a close race with QuarkXPress, PageMaker gets the nod with such standout features as minisave (which automatically saves the page you're working on when you switch to another page), superior indexing, and links between documents. **Company:** Aldus Corporation. **List price:** \$795.

Long-Document Program

FrameMaker This program outshines the competition with an excellent table editor, style sheets that improve on those of popular word processors, and *conditional text*—a feature that lets you create different versions of a document from a single base document. **Company:** Frame Technology. **List price:** \$795.

are ideal for creating small, graphically oriented publications, especially ones requiring special typographic effects. Illustrator 3.0 handles text particularly well, even allowing you to link frames so that text flows from one to another.

Then there's Multi-Ad Services' \$895 Multi-Ad Creator, which lets you create documents containing numerous versions of a single page. With its PageMaker-like place-and-go layout scheme, built-in library of PostScript text special effects, and superb style-sheet features, it's an excellent choice for producing single-page publications, especially display ads.

In the diversifying world of desktop publishing, PageMaker and QuarkXPress will remain the preeminent programs—and deservedly so. Still, it's good to see the market expand to encompass novices as well as professionals with specialized requirements. After all, the printed word can take many forms, and no single program can handle all of them. **m**

See *Where to Buy* for contact information.

Contributing editor and Getting Started columnist JIM HEID is a former typographer and the author of Macworld Complete Mac Handbook (IDG Books Worldwide, 1991). He has also designed and produced quick-reference cards for several IDG books.

Enhancing Page Layout

CUSTOMIZE

YOUR

PUBLISHING

SOFTWARE

WITH THESE

UTILITIES

AND ADD-ONS

BY JIM HEID

NO PROGRAM CAN BE ALL things to all people. That truism is the driving force behind one of the most recent trends in desktop publishing software: *extensibility*. Just as you can enhance your Macintosh with plug-in boards and external add-ons, you can improve old desktop-publishing features or add new ones through software that plugs into or works alongside a publishing program.

Although Aldus began offering layout templates shortly after PageMaker debuted, Quark pioneered the trend to the customized publishing environment in 1989 when it introduced Xtensions. Letraset followed Quark's lead when it introduced DesignStudio, whose software add-ons are called Annexes. Aldus joined the fray when it recently announced its Aldus Additions technology, which debuts in PageMaker 4.2, scheduled to ship by the time you read this.

To understand why extensibility is desirable in publishing software, consider any large publishing department. Of course it has typesetters and pasteup artists, but it also needs specialists for each publishing niche: Darkroom technicians prepare the publication's images. Proofreaders and editorial assistants check spelling and compile indexes. Research assistants cull information from databases and wire-service reports. Managing editors monitor the big picture and shepherd stories through the production process. Advertising coordinators sell, track, and manage ad space. Strippers integrate the elements of each page on film—text, graphics, photographs—and then organize those pages so that they're in the correct order after being printed,

cut, folded, and bound. An equivalent publishing add-on exists for every one of these job specialties—if you use QuarkXPress, that is.

Over 60 extensions and stand-alone utilities are available for QuarkXPress. Roughly a dozen additions should be shipping for PageMaker by the time you read this; Aldus estimates at least 50 more will be shipping by mid-1992. Only a few annexes are offered for DesignStudio, all created by Letraset, and all but one (a tool for automating the creation of publications) bundled with DesignStudio. (Bundled annexes improve hyphenation and enable you to edit kerning and tracking tables, perform color separations, and create lists of fonts or pictures.) Letraset has just opened DesignStudio's annex technology to outside developers; time will tell whether the program, the least popular of the three, will attract them in significant numbers.

For now, at least, Quark and Aldus are the major players in mainstream publishing extensibility. (Other publishing programs are extensible to lesser degrees, allowing you to add file import/export filters, foreign-language spelling-checker dictionaries, and scanner drivers.) When you choose between PageMaker and QuarkXPress, you're also buying into an extensibility technology. Understanding how those technologies differ may help you choose the one that can grow to meet your specific needs.

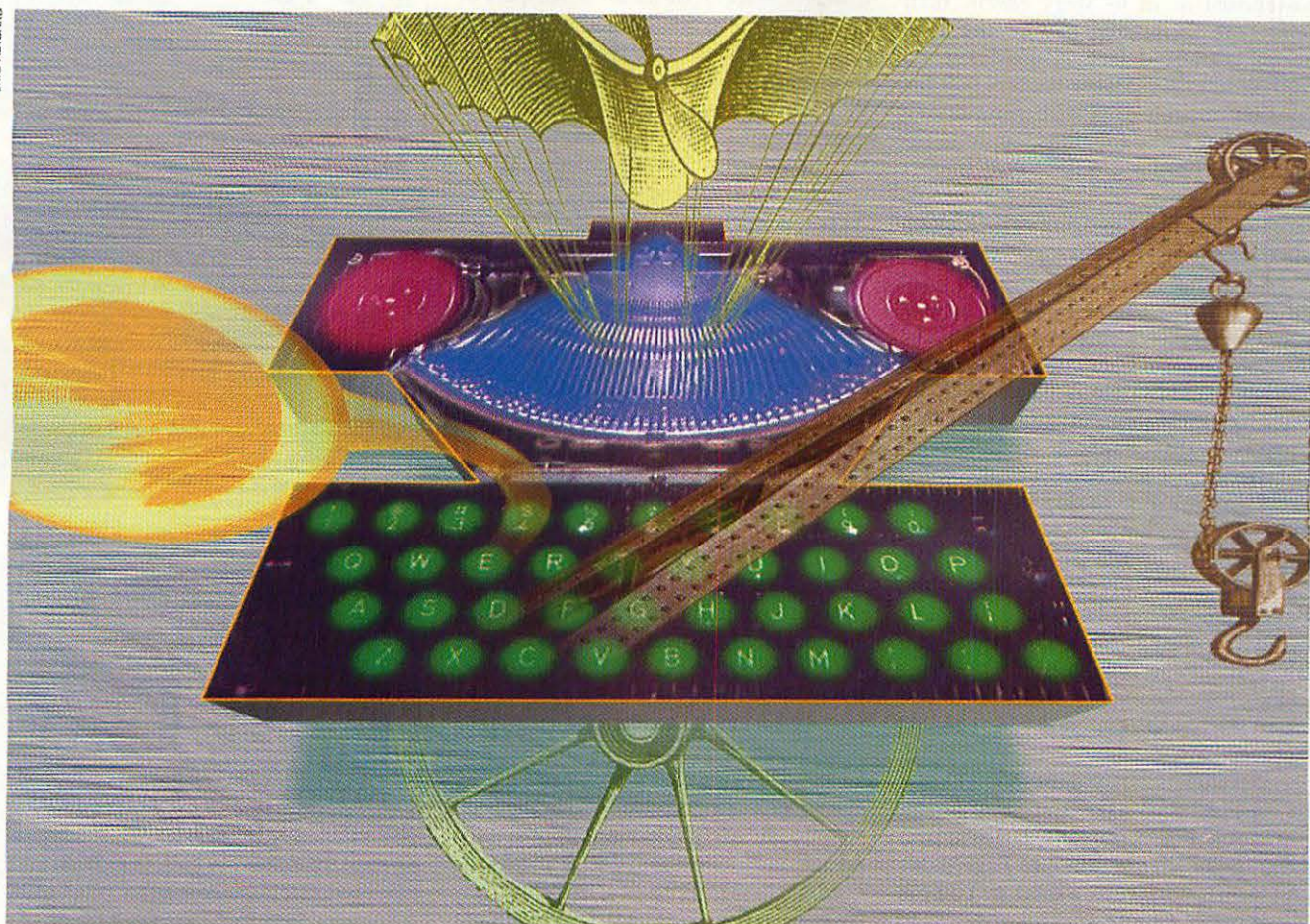
How Software Add-Ons Work

UNLIKE EXPANDING A MAC, EXPANDING a publishing program involves no slots or static-sensitive circuit boards. To install a utility, simply copy it to a special folder on your hard drive. When you start the publishing program, it examines the folder containing the utility and loads

the add-ons it finds. The names of the add-ons appear in one or more of the program's menus.

Beyond these basics, however, the programs' underlying approaches to extensibility diverge. Quark's Xtensions technology allows extensions to tap into QuarkXPress's software code. Quark provides dozens of software routines that extensions developers use to create dialog boxes and manipulate style sheets, ruler guides, text and picture boxes and their contents, menus—every aspect of QuarkXPress. Extensions can add commands to any QuarkXPress menu, and those commands can be dimmed (made unavailable) when it wouldn't make sense to choose them. Extensions can display floating tool palettes that are always available and that operate like QuarkXPress's own palettes. In short, extensions can weave themselves into QuarkXPress and become part of it.

Because extensions are intimately tied to QuarkXPress, however, compatibility problems often arise when Quark releases a new version of the program. Quark acknowledges this, but says many developers revise their extensions any-



way in order to exploit the new features that a new version of QuarkXPress provides. Some extension developers I talked to agreed, but many said the need to keep pace with Quark means more work for them and more inconvenience for their customers. For consumers, the lesson is clear: before buying an extension, verify that it works with your version of QuarkXPress.

Aldus aims to avoid this problem by putting some distance between PageMaker and its additions. Instead of granting developers access to PageMaker's code, Aldus has created what it calls the interface manager, a go-between that allows additions to interact with PageMaker through two text-based languages. One language comprises commands: put a ruler guide at the 3-inch vertical mark, create a new tabloid-size document, import a file, and so on. The other language handles queries: What font does the selected text use? Where is the ruler's current zero point? What are the current tracking settings? Both languages are fairly easy to understand because they're derived from PageMaker's menu commands and mouse actions.

Essential Differences

BUT THE PROBLEM WITH COMPUTER languages is that they have finite vocabularies. A PageMaker addition can't make PageMaker do anything that PageMaker doesn't already know how to do. Imagine the Aldus Additions technology as a set of wires leading to a puppet's limbs. Now imagine Quark's Xtension technology as both providing those wires and allowing developers to add entirely new limbs.

This isn't to say that Additions can't make PageMaker do new things. They can, but ultimately additions rely on the command and query languages to put their efforts on PageMaker's pasteboard.

Consider the Sort Pages addition that will accompany PageMaker 4.2: Sort Pages lets you reorganize pages by dragging icons within a window—certainly a new feature. When you close the window, the addition uses PageMaker's command and query languages to insert and delete pages and cut and paste as needed to reorganize the publication. The Sort Pages addition doesn't teach PageMaker how to sort pages; it simply uses the Aldus Additions mechanism to

automate the grueling process of inserting, deleting, cutting, and pasting.

A more direct limitation of Aldus Additions is that an addition must complete its work before you can return to the publication window. Thus you won't see additions that provide floating tool palettes that are always available (as with many Quark Xtensions). Nor does the Aldus Additions mechanism allow an addition to appear in any PageMaker menu—all additions appear in the Aldus Additions submenu (in the Options menu). Finally, an addition's name cannot be dimmed when the addition isn't relevant. For example, it wouldn't make sense to choose the Drop Cap addition (bundled with PageMaker) when you have a graphic selected. This bends Apple's rules for how Mac programs are supposed to work.

Additional Advantages

BUT THE ALDUS ADDITIONS MECHANISM also has some significant advantages over the Xtension technology. You can create your own additions by writing scripts in PageMaker's command language. Want to automate a repetitive

task? Type a script on PageMaker's pasteboard or in its story editor, then select the script and choose the Run Script command (see "PageMaker on Autopilot"). PageMaker hackers will litter their pasteboards with time-saving scripts that make fractions, apply kerning, shift baselines, reflow text, import files, and much more. Expect to see script collections appearing in user group libraries and online services.

Additions technology also enables different applications to work together with PageMaker. Using AppleEvents, the interapplication communication (IAC) mechanism in System 7, PageMaker can exchange messages and data with other programs that support AppleEvents. PageMaker 4.2 and Aldus's forthcoming FreeHand 3.1 (due to ship by the end of 1991) illustrate how handy this can be: if you press the option key while clicking on an imported FreeHand illustration, PageMaker starts FreeHand 3.1 and opens the illustration. When you've finished modifying the illustration in FreeHand, PageMaker imports the new version. QuarkXPress doesn't support AppleEvents.

Developers can also use AppleEvents to control PageMaker from separate applications. For example, a database program might shuttle data into PageMaker and format it to create a catalog. You can also create remote-control macros in Microsoft Excel 3.0, HyperCard, and other AppleEvents-capable programs.

As mentioned earlier, Aldus says PageMaker's interface manager will shield commercial additions from the new-version compatibility problems that occur in the QuarkXPress world. We

shall see. Aldus also says the interface manager makes it easier for developers to create additions for both the Mac and DOS PC versions of PageMaker. This, too, remains to be seen, although it's true that having identical command and query languages on the Mac and DOS PC should streamline the process. At this writing, the DOS PC version of QuarkXPress is still in development, and it isn't clear how easy it will be for Quark extensions developers to convert their wares to the PC version.

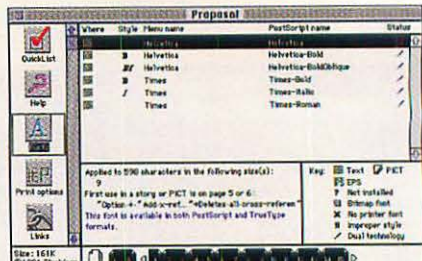
Shopping for Add-Ons

"UTILITY DIRECTORY" LISTS EXTENSIONS, additions, and annexes that are available for QuarkXPress, PageMaker, and DesignStudio. Quark also publishes a detailed extensions directory free on request. Many extensions are developed by small software shops that aren't equipped to take orders and ship products. The best source for purchasing extensions is San Francisco-based XChange (415/337-0102, 800/788-7557). The firm also puts publishing companies seeking customized extensions in touch with free-lance programmers.

So who wins the extensibility contest? For sheer numbers, Quark. Whether you want to create complex impositions, track ad placement, customize style sheets, or create crossword puzzles, there's an extension for the job. The large selection of top-quality extensions makes QuarkXPress the most versatile publishing program available.

Many extensions are geared toward high-end pagination and publication management, giving QuarkXPress additional appeal for newspaper and periodical publishing. This appeal may grow when Quark releases QuarkCopyDesk, a \$17,000 editorial- and production-management system that, among many other things, Quark says, will enable editors to write and file stories that are stored on a central file server, where they can be imported into QuarkXPress. QuarkCopyDesk will use new software, QuarkDispatch, to provide routines developers can use to write programs that enable users to log into and out of a network publishing system, track story revision histories, and more. These products are both scheduled for delivery in the second quarter of 1992.

Quark has the edge in numbers, but whose extensi-



ElseWare CheckList If you send publications to service bureaus, consider this \$179.95 program. CheckList scans a PageMaker publication (or a printed-to-disk PostScript file) and reports on the fonts it uses, the text and graphics files it contains, the print options specified for it, and much more. You can even compress the publication and its source files. An older version of CheckList is distributed as shareware through user groups and online services. (For a review of CheckList, see *Reviews*, this issue.)



Advanced Separations By itself, QuarkXPress can't color-separate continuous-tone images. With PrePress Technologies' \$495 SpectreSeps QX, it can. This X-extension also enables you to color-correct an image to compensate for the somewhat inaccurate colors generated by color scanners. The Range pop-up menu lets you define the image's overall tonal range (the difference between highlight and shadow densities), the Gradation pop-up allows you to lighten and darken images, and the Sharpness pop-up lets you sharpen and blur images.

bility technology is the best? That's a tough call, but based on the preliminary information available at this writing, I give a slight edge to Aldus. The first generation of the Aldus Additions technology limits what additions can do, and it still remains to be seen whether going through PageMaker's interface manager will make additions slower than extensions that perform equivalent tasks—especially since PageMaker is already generally slower than QuarkXPress.

But because additions are insulated from PageMaker's underlying code they should be less prone to compatibility problems. Moreover, Aldus Additions' AppleEvents support lays the foundation for links between PageMaker and other programs. Besides simplifying the process of moving information into and out of PageMaker and updating source files

PageMaker on Autopilot

This Aldus Additions script shows how you might use scripts to automate the production of a weekly status report. The text following each set of double hyphens are comments that describe each statement's purpose.

```
new--create a new publication
pagesize 8.5, 11--make it an 8.5 by 11 inches, tall
pageoptions off,off--turn off double-sided, facing pages
pagemargins 1, 1.5, 1, 1--set page margins
page RM--go to right master page
guidehoriz 1.5--make ruler guide 1.5 in from page top
linestyle thickthin--use double-rule, thick/thin line style
line (1,1),(7.5,1)--draw a line across top of page
line (1,10),(7.5,10)--draw a line across bottom of page
page 1--go to first page
autoflow on--turn Autoflow on
import "report"--import file named "report"
place (column 1 left, 1.5)--place it starting at col. 1
```


UTILITY DIRECTORY

Product Name	Price	Description
DESIGNSTUDIO ANNEXES		
DesignScript	\$125.00	Automates publication creation using coded text files
PAGEMAKER ADDITIONS AND UTILITIES		
Aldus PrePrint	1	Color-separates files from PageMaker and other programs
CheckList	\$179.95	Streamlines sending publications to service bureaus
DataShaper	\$179.95	Automates production of publications containing information from a spreadsheet or database
PageMaker Dictionaries	\$89.00	Adds foreign-language legal, medical, and scientific dictionaries
PageTracker	\$99.00	Edits PageMaker's kern tracks
Tableau	\$495.00	Manages and imports classified ads
Table Editor	1	Creates tables for importing into PageMaker
QUARKXPRESS XTENSIONS		
Advertising Advantage	\$495.00	Generates ads and tracks ad co-op billing rebates for retail stores
Agfa XPress Scan	\$550.00	Controls Agfa ACS100 and Focus scanners from QuarkXPress
At/Cu	\$20.00	Adds moving eyeballs to QuarkXPress dialog boxes
Atan Express	\$5000.00	Connects QuarkXPress to Atex systems
Autopage	\$6100.00	Automates book, manual, technical document construction
BureauExpress	free	Compresses/transmits publications to BureauMaster-based sites
ClassManager	\$2495.00	Provides billing, order entry, tracking of classified ads
ClassManager/Plus	\$2995.00	Same as Class Manager but adds classified ad layout features
ColorSnap 32+	\$995.00	Captures 24-bit color images from any video source
CommLink/Plus	\$995.00	Links Mac to dedicated typesetters via RS-232C interface
CopyBridge	\$1500.00	Translates XyWrite styles and documents to QuarkXPress format
CopyFlow	\$395.00	Streamlines importing large numbers of text or graphics files
CopyFlow Reports	\$225.00	Reports relationship between source files and publication
Copy Specs	\$30.00	Allows copying and pasting of text formatting attributes
Dashes XTension	\$200.00	Provides dictionary- and algorithm-based hyphenation
MacStep-Flexo Step & Repeat	\$4695.00	Repeats publication files for label and tag printing
GrafIXChange	\$295.00	Imports IBM PC graphics file formats
Grid Layout	\$24.95	Simplifies creating layout grids
Grids&Guides	\$49.95	Streamlines QuarkXPress grid and ruler-guide features
Keyliner	\$2500.00	Provides high-end stripping features
MakeBooklet	2	Organizes pages for saddle-stitch binding
MS Word XTensions	\$295.00	Imports files from PC version of Microsoft Word
Mycro-Comp Page	\$49.95	Automates production of editorial and classified ad sections
NewsEdit	\$375.00	Text editor with copy-management features
NewsLink	\$1500.00	Builds pages from stories stored on SunType Editorial System
Overset	\$69.00	Creates temporary text box for overset text
Page Director	\$1495.00	Automates production of newspapers and other periodicals
Palos	1	Automates layout of color publications; includes image-capture software and multiuser image database
PinPointXT	\$79.50	Reports PostScript printer errors, aids in troubleshooting
Printer's Spreads	\$179.00	Creates impositions for saddle-stitched publications
Professional Catalog Link	\$4995.00	Links QuarkXPress to mainframe databases to verify prices
Publication Locking	\$295.00	Enables page elements to be locked according to various criteria
The Puzzler	\$495.00	Generates crossword puzzles
QSpool	\$495.00	Adds print-spooling features (works with NewsEdit)
QTools	\$195.00	Provides copyfitting utilities and generates jump and runaway lines
QXEdit	\$149.00	Adds story editor window to QuarkXPress
Resize XT	\$40.00	Allows percentage scaling of text and graphics boxes and lines
SCS/LinX	\$2750.00	Builds newspaper pages mixing editorial and advertisements
Service Bureau XTension	\$395.00	Reports on fonts, linked graphics, other publication features
SetInset	free	Allows setting of different text inset values for all sides of text box
SetSnap	free	Allows customizing of guide snap-to sensitivity
SignMaker	2	Generates retail store signs
Sonar Bookends	\$129.95	Generates tables of contents and indexes

Product Name	Price	Description
Sonar TOC	\$99.95	Generates tables of contents (requires Sonar Bookends)
SpectreScan QX	\$295.00	Controls popular scanners from within QuarkXPress
SpectreSeps QX	\$495.00	Enhances QuarkXPress's process color separation features
SpellBound XTension	\$200.00	Checks spelling
StylePro	\$49.95	Adds Style palette to QuarkXPress
Tableau	\$495.00	Manages and inserts classified ads
Tableworks	\$299.00	Adds table-editing features to QuarkXPress
Thesaurus reX	\$69.00	Adds online thesaurus
TimeStamp	\$30.00	Stamps documents with date and time of last revision
TMS Express	1	Connects QuarkXPress to TMS/EMS systems
TransTags	\$495.00	Converts coded files from dedicated typesetting systems
Visionary/Q	1	Creates databases, fractions, and more for Scitex imaging equipment
Wang WP/PC XTensions	\$395.00	Imports files from Wang word processors
WireManager	\$1895.00	Collects wire service stories and stores on hard drive
WordPerfect XTensions	\$295.00	Imports files from PC version of WordPerfect
Xdata	\$295.00	Automates production of directories and other publications containing information from a database manager
XMacro	\$650.00	Translates coded files into QuarkXPress format
XSize	\$325.00	Simplifies picture resizing
Xstyle	\$79.00	Adds style-editing palette to QuarkXPress

NON-SHIPING

Product	Price	Description (Contact Information)
QUARKXPRESS XTENSIONS		
AdLink	\$2500.00	Provides multiuser database for production and placement of display ads (Synaptic Micro Solutions, 800/526-6547)
Default Settings	\$49.95	Customizes interface (a lowly apprentice production, 619/459-7655)
DigiMac	2	Connects QuarkXPress to DigiDesign prepress systems (MacMeckarna AB, 011 46/40-758-00)
ImageBase	2	Builds photographic databases, tracks use of photos (MacMeckarna AB, 011 46/40-758-00)
INposition	\$1750.00	Creates impositions (David King & Associates, 619/488-8118)
InsertSpace	\$49.00	Optically centers text (XTend, 908/821-6400)
PINK Press	2	Provides multiuser text-editing, page production, and publication administration (PINK America, 212/522-7465)
ProPublisher	\$75.00	Automates tasks with function keys (XChange, 415/864-7592)
XMacro	2	Translates coded files into Quark format (XChange, 415/864-7592)
XSize	2	Simplifies picture resizing (XChange, 415/864-7592)
XTension Manager	\$69.95	Enables/disables XTensions (David King & Associates, 619/488-8118)
PAGEMAKER ADDITIONS AND UTILITIES		
BureauExpressPM	free	Compresses/transmits publications to BureauMaster-based service bureaus (Compumation, 814/238-2120)
Graphics Import and Rotation	2	Rotates/flips graphics in formats that can be imported by PageMaker, as well as other formats (Equilibrium, 415/457-6333)
PagePort	\$129.00	Opens multiple publication files and enables movement of elements between pages (Altura Software, 408/655-8005)
PMcopyFit	2	Adds vertical justification and copyfitting features (EDCO Services, 813/962-7800, 800/523-8973)
PMproKit	2	Enhances tabs, text rotation, kerning, tracking, and more (EDCO Services, 800/523-8973)
PMproPages	2	Imports coded files from dedicated typesetting systems (EDCO Services, 800/523-8973)
Rotation	2	Rotates/flips graphics in formats that can be imported by PageMaker (Equilibrium, 415/457-6333)
Visionary1A	2	Creates grids, databases, fractions, and more for Scitex imaging equipment (Scitex Graphic Arts User Group, 615/366-1798)

For contact information on shipping products, see *Where to Buy*. ¹ Included with PageMaker. ² Contact company for pricing information.

as a publication evolves, AppleEvents support will make possible powerful stand-alone additions that handle specialized publishing tasks.

And the Aldus Additions scripting language is a strong asset that will enable all PageMaker users to extend Page-

Maker in ways that will streamline their own work. To many users, scripts may be the most useful aspect of PageMaker 4.2's extensibility. After all, to extend a program is to customize it to meet your particular needs, and no one knows those needs better than you. **m**

See *Where To Buy* under DTP Utilities for contact information.

Contributing editor JIM HEID is a former typographer and the author of *Macworld Complete Mac Handbook* (IDG Books Worldwide, 1991), an expanded, updated collection of his *Getting Started* columns.

Seeking Midrange HARD DRIVES

**Macworld Lab
tests 44 external
hard drives from
120MB to 220MB**

BY BRUCE F. WEBSTER

You may be startled to realize that *mid-range* for hard drives now means between 120 and 220 megabytes of storage—especially since the largest (and only) external hard drive Apple sells holds just

80MB. But such is the case. Increasing capacities; decreasing costs; and the ballooning size of system software, applications, and data files have combined to shift the midrange definition, which just a few years ago was 40MB to 80MB. No doubt, it will

continue to shift upward.

Get as much space as you can afford. It's my observation that most hard drives tend to reach equilibrium at around 90 percent of their capacity, which means that if you purchase a 200MB hard drive, after several months you will find yourself with 180MB of applications, images, data, sound, fonts, utilities, games, and so on. At that point you start wishing you'd purchased a larger drive—so you might as well buy the largest drive you can afford in the first place.

You may also be startled to realize that the price for a 200MB to 210MB hard drive can range from \$659 (the Club Mac 207MB) to \$1799 (the Rodime Systems Cobra)—with drives at both ends of the price range using the exact same drive mechanism.

Weighing Performance Factors

THERE'S MORE TO DRIVE PERFORMANCE than raw speed. For each task performed—mostly standard Macintosh functions, such as launching applications, saving files, and searching databases—Macworld Lab recorded how long the various operations within a task take: the central processing unit (CPU) selecting the drive, the drive receiving commands, the drive receiving and sending data, and the drive releasing the bus back to the CPU, for example. The lab staff distinguished between *CPU time* (the time taken up by operations that rely solely on the CPU) and *disk-access time* (the time used by operations that involve the hard drive itself and SCSI communication between the drive and the CPU).

Separating the two types of access time is important because disk-access time

is what you as a buyer can use to determine which hard drive will work fastest for you. If you have a Mac Classic, there is little point in picking one of these hard drives based on disk access speed, since the Classic's slow (8MHz 68000) CPU and SCSI interface are the limiting factors on performance of most hard drive operations. But if you're getting a Quadra 700 or 900—with a 25MHz 68040 CPU and a hopped-up SCSI interface—you may well want one of the drives with the fastest access times, since the *drive's* performance will be the limiting factor most of the time.

If you have a relatively fast Mac like a II, the most important speed factor is the kind of disk access you are doing. Some tasks, like loading a Microsoft Excel file, use little disk-access time, while others, like duplicating files, use a lot of disk access time. To help you gauge your needs, see "When Disk Speed Matters."

The formatting software you use can also make a difference. For example, we formatted the Total Peripherals 210MB drive first with the software that came with the drive, and then with Club Mac's SCSI Director software. When formatted with SCSI Director, the drive was at least 10 percent faster.

The version of a drive's ROM can have a similar effect: both the FWB PocketHammer200 and MacProducts USA MagicDrive drives use Quantum PD



Speed Demons No matter your price range or desired capacity, you'll find a fast drive. In our tests, the MacTel Technology Index 210, GCC Technologies UltraDrive 1755, and FWB PocketHammer200 (top to bottom) clocked in as the fastest.

210 mechanisms, and we formatted them with the same software, but the FWB was at least 10 percent faster. Why? The FWB uses a later version of Quantum's ROM: 527 versus 501C.

The overall speed difference between the fastest drive (FWB PocketHammer200) and the slowest drive (Relax Vista 180) is about 35 percent. This

means that a task that takes 13 seconds with the PocketHammer200 will take about 20 seconds on the Vista 180. While that 35 percent difference may be significant if you deal with large files (such as graphic images) or heavy disk access (such as program compilation or page swapping), it is insignificant in casual, everyday use. What's more, most drives

tested scored within about 10 percent of the fastest drive—in other words, they had at least 90 percent of the speed of the PocketHammer200. And drives from the same assembly line vary 2 or 3 percent from each other because of manufacturing differences.

With the small speed differences among most drives' mechanisms, it's easy

HARD DRIVE DETAILS

Company	Product	120-130MB Drives (capacity/mechanism/price)	140-180MB Drives (capacity/mechanism/price)	200-220MB Drives (capacity/mechanism/price)	Sales Method	Dimensions	Termination	Connectors	Universal Power Supply	Backup Software
APS	APS	120/M/\$439	170/Q/\$589	200/M/\$689; 210/Q/\$699	dealer, direct	2.8 x 9.5 x 9.7	ext.	50-pin	●	○
CD Technology	HD Porta-Drive	○	○	200/C/\$1595	dealer	2 x 6.8 x 8.3	ext.	50-pin	●	○
Club Mac	Club Mac	120/Q/\$589	170/Q/\$609	207/M/\$659; 210/Q/\$709; 220/HP/\$799	direct	2 x 10 x 10	int.	50-pin	●	○
CMS Enhancements	Platinum	○	○	200/WD/\$1499	dealer	2 x 10 x 10.5	ext.	50-pin	●	●
Core International	Optima 200	○	○	220/HP/\$1429	dealer	2.3 x 6.8 x 8.4	ext.	50-pin	●	●
Cutting Edge	Cutting Edge	○	170/Q/\$1169	210/Q/\$1279	dealer	2.3 x 9.8 x 10.4	int.	50-pin	●	●
Deltaic Systems	Server	○	○	210/Q/\$749	dealer, direct	2.5 x 9.7 x 9.7	ext.	50-pin	●	○
DJK Development	DJK	○	○	213/M/\$959	direct	2.5 x 9.8 x 9.8	ext.	50-pin	●	●
Ehman	Ehman	○	170/Q/\$729	210/Q/\$749	direct	2.3 x 9.8 x 10.4	int.	50-pin	●	●
ETC Peripherals	DataPort	120/M/\$714	170/Q/\$936	210/M/\$1011	dealer	2.8 x 9.8 x 9.8	ext.	50-pin	●	○
FWB	PocketHammer200	○	○	200/Q/\$1799	dealer	3 x 6.5 x 9	ext.	50-pin	●	○
GCC Technologies	UltraDrive	○	175S/CDC/\$1399	○	dealer, direct	2.8 x 9.5 x 10.7	switchable	50-pin	●	●
Hard Drives International	PowerDrive	○	○	210/Q/\$698; 213/M/\$679	direct	2.5 x 10 x 10	int.	50-pin	●	○
La Cie	Cirrus	120/Q/\$679	170/Q/\$799	210/Q/\$879	direct	3 x 6 x 9	switchable	25-pin	●	●
La Cie	Tsunami	120/Q/\$729	170/Q/\$849	210/Q/\$929	direct	6 x 2.8 x 8	switchable	25-pin	●	●
La Cie	ZFP	120/Q/\$579	170/Q/\$699	210/Q/\$779	direct	9.75 x 9.75 x 2.4	switchable	25-pin	●	●
Liberty Systems	Liberty 50 series	120/Q/\$999	○	○	direct	1.9 x 4 x 7	int.	25-pin	optional	○
Liberty Systems	Liberty 70 series	○	170/Q/\$1199	210/Q/\$1299	direct	2 x 5 x 7	int.	25-pin	optional	○
MacProducts USA	MagicDrive	○	170/Q/\$699; 170/CDC/\$999	210/Q/\$799	dealer, direct	2.5 x 9.9 x 9.3	int. or ext.	50-pin	●	○
MacTel Technology Corporation	Index	○	○	210/Q/\$699	direct	2.5 x 10.2 x 10.2	ext.	25- or 50-pin	●	●
Mass Microsystems	DiamondDrive	130/M/\$1079	○	213/M/\$2549	dealer	2.7 x 9.8 x 10	ext.	50-pin	●	○
MicroNet Technology	MS	○	173/S/\$1849	200/M/\$1445	dealer	2.5 x 9.8 x 10.5	ext.	50-pin	●	○
Microtech International	Microtech	○	○	200/Q/\$1699	dealer	2.5 x 9.5 x 10.5	ext.	50-pin	●	●
Mirror Technologies	Mirror	○	○	210/Q/\$829	direct	2.5 x 9.8 x 10.8	ext.	50-pin	●	●
Optima Technology Corporation	MiniPak	130/U/\$1395	○	200/U/\$1795	dealer	2.5 x 6.2 x 7.8	ext.	50-pin	●	○
Optima Technology Corporation	DiskOvery	130/U/\$1395	○	200/U/\$1795	dealer	2.5 x 11.4 x 10.2	ext.	50-pin	●	○
Peripheral Vision Storage	PV	○	○	200/Q/\$749	direct	2.5 x 9.5 x 9.8	switchable	50-pin	●	○
PLI	PL Turbo	○	○	200/Q/\$1199	dealer, direct	2.4 x 9.8 x 9.8	switchable	50-pin	optional	●
Procom Technology	Procom	○	○	210/Q/\$1550	dealer	2.5 x 9.5 x 10.5	ext.	50-pin	●	○
Relax Technology	Vista	○	180/F/\$659	210/Q/\$699	direct	2.3 x 10.2 x 10.2	ext.	50-pin	●	○
Rodime Systems	Cobra	○	120/M/\$1229	210/M/\$1799	dealer	2.4 x 9.7 x 10.4	int.	50-pin	●	●
Storage Dimensions	MacinStor ZFP	120/M/\$1009	○	205/M/\$1609	dealer	2.3 x 9.7 x 10.5	ext.	50-pin	●	○
Third Wave Computing	Third Wave	○	○	210/Q/\$759	dealer, direct	2.5 x 9.8 x 9.8	ext.	50-pin	●	○
Total Peripherals	TP	○	170/Q/\$829	210/Q/\$929	dealer	3.3 x 10 x 10.5	int.	50-pin	●	○

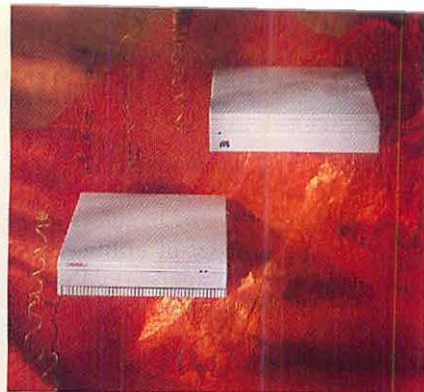
● = yes; ○ = no, none; C = Conner; CDC = CDC; F = Fujitsu; HP = Hewlett-Packard; M = Maxtor; Q = Quantum; S = Seagate Wren V; U = unknown (company would not disclose); WD = Western Digital

to see why issues like the driver, ROM, and formatter can make a big difference in actual performance. And that's why several companies have been successful selling disk utilities that can speed up a hard drive. Such products include La Cie's Silverlining, Golden Triangle's DiskMaker, FWB's Hard Disk Toolkit, and Casa Blanca Works' Drive7. One of

these might turn a middling performer into a star—for a combined cost less than that of a top-speed drive.

Price Trends

JUDGING A HARD DRIVE'S PRICE involves issues of time, reliability, and peace of mind, not just dollars. Midrange hard drives tend to fall within three price



Best Buys All around, the APS 170 (top), Mirror Technologies Mirror 210 (bottom), and MacTel Index 210 (shown on page 219) are the best deals, offering low prices and solid performance.

Other Bundled Software	Maximum Partitions	AI/UX Partitioning	Password Protection	Warranty (in months)	Extended Warranty (in months)	Toll-free Technical Support	Repair Turnaround (in days)	Data Recovery on Request	On-line Technical Support
public domain	52	●	○	24	○	●	2	for a fee	BBS
○	unlimited	●	○	24	○	○	14	for a fee	○
SCSI Director	unlimited	●	●	48 (Q,M); 60 (HP)	○	○	2-5	○	○
SUM II	16	●	●	12	12 ¹	○	2-5	none	AppleLink; BBS; GEnie
SUM II	44	●	●	60	○	●	2	○	BBS
DiskDoubler	unlimited	●	○						
○	1	○	○	24	up to 60	●	2-3	for a fee	○
○	99	●	●	24	up to 60	○	7-10	free	BBS
DiskDoubler	unlimited	●	○	24	12 ¹	○	1	for a fee	America Online;
ETC Tools 2.0	1	○	○	12	up to 24	●	3	for a fee	○
Hard Disk Toolkit	unlimited	●	●	24	○	○	2	free	CompuServe
MacTools Deluxe, public domain	unlimited	●	●	24	12 ¹	●	2	free	America Online; AppleLink; CompuServe; GEnie
○	unlimited	●	○	12 (M); 24 (Q)	up to 24	●	2	○	○
○	60	●	○	24	60	●	3	for a fee	○
○	60	●	○	24	60	●	3	for a fee	○
○	60	●	○	24	60	●	3	for a fee	○
○	unlimited	●	○	12	12	○	2	for a fee	AppleLink
○	unlimited	●	○	12	12	○	2	for a fee	AppleLink
○	unlimited	●	●	24 (Q); 48 (CDC)	up to 60	●	2	free	BBS
public domain	unlimited	●	●	24	○	○	2	free	○
○	unlimited	○	○	24	○	●	2	for a fee	○
○	36	●	●	12	12 ¹	○	2	○	○
Norton Utilities, public domain	unlimited	●	○	60	○	●	2	free	BBS
public domain	15	●	●	24	12 ¹	○	2	for a fee	America Online; BBS; GEnie
○	unlimited	●	●	12	up to 36	○	1	free	AppleLink; BBS
○	unlimited	●	●	12	up to 36	○	1	free	AppleLink; BBS
○	unlimited	○	○	36	○	○	none	○	○
public domain	6	○	○	12	12 ¹	○	○	○	○
○	unlimited	●	●	12	up to 48	●	2	○	BBS
○	unlimited	○	○	36 (F); 24 (Q)	○	○	2	○	AppleLink
MacTools Deluxe	unlimited	●	●	24	○	○	3	○	AppleLink
MacInStor Installer	unlimited	●	●	24	up to 48	○	2	○	○
○	unlimited	●	●	24	○	●	2	for a fee	America Online; AppleLink; Connect
○	1	○	○	24	○	○	3	free	AppleLink

¹ Renewable.

groups. The low-cost drives range roughly from \$700 to \$900. The midcost drives fall in the \$1100 to \$1300 range. And the high-cost drives go from \$1600 to nearly \$1900. The pricing reflects some general trends. For example, the low-cost drives' cases tend to look similar to each other, the midcost drives include fancier models such as the La Cie Tsunami drives, and the most expensive 200MB to 220MB model is also the fastest: the FWB PocketHammer200, at \$1799. But some of the fastest drives—such as the MacTel Index 210 and the Mirror Technologies Mirror 210—are among the cheapest, and there are drives that inexplicably manage to be expensive, plain-looking, and relatively slow all at the same time, such as the CMS Platinum 200.

Bundled Software

ALL THE HARD DRIVES WE LOOKED AT come with utilities that let you format, initialize, and test the drive; adjust performance parameters; and recover *bad blocks* (damaged or unusable segments). Nearly all these utilities let you divide, or *partition*, a drive into several volumes that appear as separate drives (called *logical drives* by techies) on the Finder desktop. The quality, functionality, and documentation of the bundled utilities vary widely. We did not exhaustively compare these utilities, but some did appear to be superior—for example, those bundled by FWB, La Cie, Mirror Technologies, and Storage Dimensions. Other packages, such as those provided by Deltaic Systems, ETC Peripherals, and Total Peripherals, had little functionality beyond formatting the drive.

Several manufacturers install megabytes of public domain or shareware software—usually games, fonts, HyperCard stacks, and yet more utilities. Good or bad, these dealer-installed utilities introduce a serious problem: if you want to partition the hard drive, you have to either back up the software you want to keep, or lose it all when you reformat the disk to make the partitions. And you'll

probably want to delete some of the utilities to free up disk space.

A few vendors also bundle a full-blown professional set of utilities with their drives. For example, CMS Enhancements bundles SUM II, Microtech bundles The Norton Utilities for the Macintosh, and GCC and Rodime bundle MacTools Deluxe. These packages provide functions to recover lost files, repair damaged disks, and detect and prevent virus infections. But by buy-

ing one of these programs bundled with a hard drive, you may be paying more for the set than if you bought the drive and program separately.

Reliability, Warranty, and Support

PART OF A DRIVE'S REAL COST IS WHAT it takes to deal with problems that may come up. To a large extent you have to rely on what the vendor tells you. But in general, the more services and support a vendor offers, the better. All the compa-

nies offer a standard parts-and-labor warranty for anywhere from 12 months to 5 years, usually based on the drive mechanism; for example, most drives using Quantum mechanisms have at least a 24-month warranty, since that's what Quantum offers. Several vendors sell extended warranties, which extend the basic warranty to as long as five years. The length and quality of warranty offered may be a significant indication of the drive's component and assembly



Hard Drive Speed Tests 120MB-220MB

Color Key

Fastest

Percent slower than fastest

Up to 10%

11%-20%

21%-29%

30% or more

Overall Fastest

The drives are listed from best overall performance (top) to worst overall performance (bottom), based on both application and SCSI Evaluator low-level tests. To determine the ranking, we indexed overall performance numbers against the fastest drive. Thus, the FWB PocketHammer200 gets a 1.00 and the Relax Vista 180 gets a 0.65. Index numbers are listed to the left of the product name.

On the application tests, we tested each drive's ability to duplicate a 3.2MB file and a 10MB folder and search a database for a specific record. We also averaged the drive's speeds for opening and saving files from several applications including PageMaker and Excel. See "When Disk Speed Matters" for a comparison of the effort required for a drive to save various kinds of files.

C = Conner

CDC = CDC

F = Fujitsu

M = Maxtor

Q = Quantum

S = Seagate Wren

U = unknown

(company would not disclose)

WD = Western Digital

Overall Slowest

1.00	FWB PocketHammer200 (Q)
0.99	MacTel Index 210 (Q)
0.97	Storage Dimensions MacinStor 205-ZFP (M)
0.96	GCC UltraDrive 175 (CDC)
0.96	Optima MiniPak 200 (U)
0.96	MicroNet MS 173 (S)
0.95	Optima Diskcovery 200 (U)
0.94	La Cie Tsunami 210 (Q)
0.94	Mirror 210 (Q)
0.94	APS 210 (Q)
0.94	Procom 210 (Q)
0.94	PLI PL Turbo 200 (Q)
0.93	Cutting Edge 210 (Q)
0.93	Microtech 200 (Q)
0.93	Liberty 70 series 210 (Q)
0.93	Peripheral Vision Storage PV 200 (Q)
0.93	Ehman 210 (Q)
0.93	Relax Vista 210 (Q)
0.91	MacProducts USA MagicDrive 170 (CDC)
0.89	Liberty 70 series 170 (Q)
0.88	Deltaic Systems Server 210 (Q)
0.88	Cutting Edge 170 (Q)
0.88	Ehman 170 (Q)
0.88	HDI PowerDrive 210 (Q)
0.88	APS 170 (Q)
0.88	Club Mac 210 (Q)
0.86	DJK 213 (M)
0.86	HDI PowerDrive 213 (M)
0.86	La Cie Tsunami 120 (Q)
0.86	MicroNet MS 200 (M)
0.84	MacProducts USA MagicDrive 210 (Q)
0.84	Rodime Cobra 210 (M)
0.82	ETC DataPort 170 (Q)
0.82	APS 200 (M)
0.81	CD Technology HD Porta-Drive 200 (C)
0.81	MacProducts USA MagicDrive 170 (Q)
0.80	La Cie Tsunami 170 (Q)
0.80	CMS Platinum series 200 (WD)
0.78	APS 120 (M)
0.78	Total Peripherals TP 210 (Q)
0.76	Liberty 50 series 120 (Q)
0.75	Total Peripherals TP 170 (Q)
0.72	Storage Dimensions MacinStor 120-ZFP (Q)
0.65	Relax Vista 180 (F)

Duplicate (in seconds)	Open (in seconds)	Save (in seconds)	Search (in minutes)	Compile (in minutes)	SCSI Evaluator Read (in kbps)	SCSI Evaluator Write (in kbps)
100.0	74.2	55.5	34.3	30.1	1.27	1.43
101.5	75.0	55.9	34.3	30.6	1.27	1.43
108.7	76.7	62.3	32.3	30.5	1.43	1.19
109.3	75.2	60.1	34.3	31.3	1.28	1.29
108.8	77.3	62.7	34.9	31.7	1.42	1.28
109.4	75.5	60.3	34.2	31.0	1.28	1.28
108.8	77.8	62.4	34.9	32.1	1.42	1.19
109.4	75.3	62.1	34.6	32.0	1.26	1.28
107.2	74.3	60.0	34.1	31.6	1.28	1.13
108.6	75.2	60.0	34.0	31.1	1.28	1.13
107.5	74.7	60.3	34.1	31.5	1.27	1.13
107.4	75.0	60.0	34.2	31.5	1.27	1.13
107.6	75.7	60.8	34.2	31.6	1.27	1.13
109.4	75.4	60.4	34.3	31.6	1.27	1.13
109.5	75.2	60.6	34.4	31.5	1.27	1.13
108.6	75.7	60.9	34.1	31.8	1.28	1.13
109.9	75.3	61.9	34.3	31.4	1.28	1.13
108.9	77.5	61.7	34.2	31.8	1.27	1.13
110.9	77.1	62.8	35.4	31.8	1.22	1.12
111.7	75.8	62.3	34.5	31.4	1.07	0.97
112.8	76.2	61.8	34.3	32.1	1.08	0.97
113.9	76.4	63.1	34.5	32.2	1.08	0.97
113.3	76.1	62.4	34.7	32.3	1.08	0.97
108.7	75.2	60.1	34.0	32.2	0.92	0.95
113.5	77.1	63.4	34.2	32.8	1.08	0.98
107.9	74.8	60.5	34.1	31.5	0.91	0.89
128.0	89.1	67.3	41.8	37.6	1.42	1.28
127.6	89.6	67.0	41.9	37.5	1.42	1.27
123.6	78.0	66.3	35.4	32.2	1.07	1.05
125.8	89.8	67.4	42.1	37.5	1.43	1.19
107.6	75.5	60.7	45.2	31.7	0.93	0.93
120.4	80.4	61.1	33.2	33.4	0.88	0.87
112.9	77.0	63.4	34.1	31.8	0.76	0.72
127.6	89.6	67.2	42.1	37.7	1.24	1.03
122.1	81.5	66.7	33.4	32.6	0.83	0.82
112.3	76.8	61.3	34.5	31.5	0.65	0.65
113.5	77.2	62.7	34.4	32.1	0.64	0.64
118.0	88.9	63.3	40.5	33.9	0.94	0.94
128.8	82.0	68.1	38.6	34.0	0.88	0.81
127.9	81.6	66.2	35.2	33.6	0.71	0.79
131.0	85.7	73.1	39.1	35.1	0.78	0.75
138.2	83.7	71.6	36.0	33.2	0.70	0.73
143.6	95.0	71.0	46.4	38.9	0.89	0.89
153.9	94.0	80.6	41.4	38.1	0.60	0.58

Mirror 210 Fast and inexpensive, this 210MB drive also has some of the best documentation, utilities, and public-domain software of the drives surveyed. **Company:** Mirror Technologies. **List price:** \$829.

Index 210 This is both one of the fastest and one of the cheapest drives in the 210MB capacity range. Despite the Index 210's low price, it also offers good documentation. **Company:** MacTel Technology Corporation. **List price:** \$699.

APS 170 If price is your primary consideration, this drive offers the best deal while delivering a lot of capacity (170MB). **Company:** APS. **List price:** \$589.

Ancillary Issues

FINALLY, THERE ARE THE ODDS AND ends that make a product a joy or a pain.

Documentation quality is one such area, and the range is wide: from literally no documentation at all (as with the Relax drives), to good basic documentation (such as with APS, DJK Development, and MicroNet Technology drives), to absolutely first-class technical manuals that are well written, informative, and useful (such as with FWB, La Cie, MicroNet, Mirror, and Procom drives).

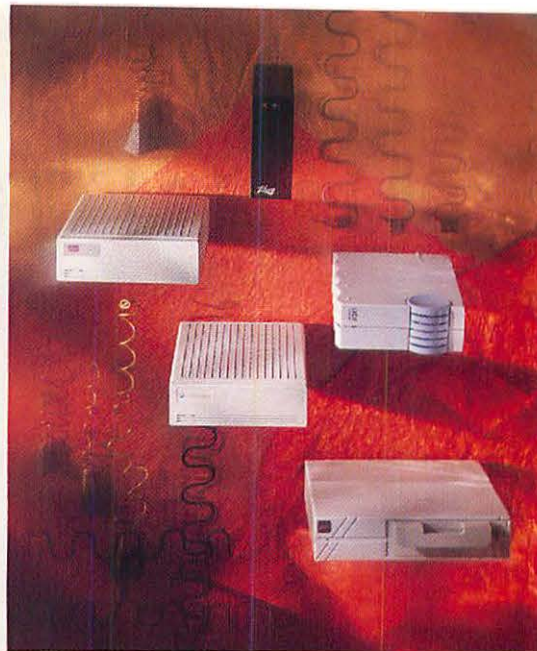
Another issue for some is a drive's size and appearance—after all, you'll be looking at it day in, day out. Most of the drives have the same dimensions, designed to fit underneath a compact Mac; fully half of the drives are almost identical in appearance and layout—and I found them unattractive. Unfortunately, the drives I found visually attractive—La Cie, FWB, and Liberty—are pricier.

Another concern is how the drive handles termination, cabling, power, SCSI IDs, and so on. Luckily, manufacturers seem to be heading toward a standard: external termination (the easiest to use), dual 50-pin connectors (standard), a push-button switch for SCSI ID (also the easiest to use), and a universal power supply that adapts automatically to a wide range of voltages (Liberty and PLI offer universal power supplies only as an option). Where internal termination is used, most companies provide a removable plate for easy access to the terminating resistors. However, a few unenlightened firms, such as CMS and Total Peripherals, require that you take the drive to a dealer (or disassemble it yourself) to change the termination.

quality. A 12-month warranty can be a warning flag, while a 48- to 60-month warranty may indicate that the company is very confident in its quality.

There is no apparent correlation between support and drive prices: some of the most complete support services are offered by low-end vendors such as APS and Mirror, while some midrange and high-end vendors (such as CD Technology and Liberty Systems) offer fewer support options.

For disk repair times, the current industry "standard"—what most companies quote when asked—is a 48- to 72-hour turnaround from receipt of the drive. Some firms are more modest (or honest) and quote turnaround times of 5 to 10 days.



Performance Art For those seeking drives that can double as desktop sculpture, five stand out (clockwise from top): the Liberty Systems Stealth 170, La Cie Tsunami 210Q, ETC Peripherals ETC DataPort C170Q, Peripheral Vision Storage PV-200, and CD Technology HD Porta-Drive 200. But art is not cheap: be prepared to spend more money to get both form and function.

Standout Performers

NOT ALL THE DRIVES IN THIS SURVEY excel. Some, such as the Deltaic Systems Server 210 and the two Total Peripherals drives, have minimal software functionality. Others, such as the Relax Vista 180, have no manual, and the few online notes are Microsoft Word files that can't be opened until you install Word. The Relax Vista 180 is also the slowest drive tested, and Total Peripherals' drives were also near the bottom of the performance list.

Some drives compete well on features but seem awfully pricey. Case in point: the Storage Dimensions MacinStor 205-ZFP was in the top five in overall performance and offers excellent utility software and documentation, but it costs \$1609.

The overall best buy is the Mirror Technologies Mirror 210 hard drive. Its \$829 price is low, and it ranks among the top 10 drives in performance. Equally important, it has some of the best documentation, disk utilities, and public domain software of the drives surveyed.

Look at drives with a lot of capacity and decide which other features you want. Then look for the lowest price. That's the best way to pick a drive. **m**

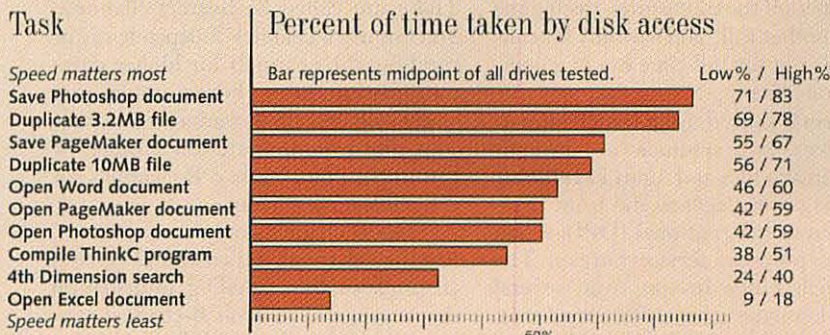
See *Where to Buy* under Midrange Hard Drives for contact information.

BRUCE F. WEBSTER, a *Macworld* contributing editor, is the vice president of product development for Pages, Inc., a San Diego-based software development firm.

Macworld Lab testing supervised by Mark Hurlow.



When Disk Speed Matters



Disk-access speed matters greatly for disk-intensive tasks like copying files and saving graphics images. But for tasks that require little disk access, disk speed is not very important. When weighing the importance of speed, keep in mind the kinds of tasks you do. For example,

opening an Excel document requires little disk access, so a fast drive is not important. The percentages reported here are based on tests conducted on a Macintosh IIci with all the drives in "Hard Drive Speed Tests." The disk-access percentages will vary on different CPUs.



Digital Data on DEMAND

Fast, reliable, pay-by-the-call data communication is here

by Lon Poole



NOTHER PART OF YOUR LIFE IS ABOUT TO go digital. This time it's data communication—transferring files, connecting to remote networks, and other “talking” a computer does on the phone with fellow computers. By going digital, you don't need to use error-prone analog modems; instead you get nearly error-free data communication at speeds modems can only dream of. Telephone companies in the United States, Canada, Japan, and Western Europe offer digital services that cost about the same to use per call as high-speed modems. These services are called switched digital services because they take advantage of switched phone lines to keep costs down. Placing a call switches on a connection to a phone line, and ending a call switches off the connection, freeing the line for another call. You pay only for calls you make, not for full-time use of a dedicated phone line.

Macworld started using switched digital services last summer to transmit scanned-image files and Aldus PageMaker files of magazine pages to and from Digital Pre-Press International (DPI), a San Francisco prepress service bureau. The files, which range in size from several hundred kilobytes to over 100 megabytes, used to be copied onto disk cartridges and carried to DPI by bike messenger. In addition, *Macworld's* San Francisco office keeps stories and artwork on a file server that sister magazines in other countries can quickly access using switched digital services. Previewing and copying those files

by modem takes forever, and transfers too often fail due to noisy phone lines.

What You Get

U.S. TELEPHONE COMPANIES OFFER two types of switched digital services, switched 56-kbps service and ISDN (Integrated Services Digital Network). With switched 56 service you get a single phone line that can transfer digital data at speeds up to 56,000 bits per second. You can't use the line to make voice calls or send Group 3 faxes.

ISDN service gives you more than one communication channel on a single line. You get two or more 64,000-bps channels for digitized voice, digital data, or Group 4 (high-speed digital) fax calls. These are called B (Bearer) channels. You can use B channels independently or combine the channels for higher data-transmission rates. For example, you might talk on one B channel while your computer communicates on another, or you might combine two B channels for video teleconferencing.

The B channels only carry content. Another channel, called the D (Delta) channel, carries signaling information that makes and controls B-channel connections. The D channel operates at 16,000 bps or 64,000 bps depending on the type of ISDN service. Signaling doesn't keep the D channel busy, so it can also be used for data transfer at rates equivalent to those of a 9600-bps modem or for X.25 packet switching.

In addition to data-transfer capabilities, ISDN can improve the sound quality of voice calls. ISDN also offers features such as the ability to display a caller's phone number before you answer a call, add that number to a list of unanswered calls, or use it to look up information about the caller in your database. (Access to the caller's number may be restricted or blocked in some states.) Several newly announced applications can use ISDN voice features, including Northern Telecom's Meridian TeleCenter, and Cypress Research's PhonePro.

Where It Goes

ALTHOUGH SWITCHED 56 AND ISDN are switched services, you can't use them to call just anywhere. You can call other switched digital lines served by the same

Where It Is

YOU MAY HAVE TROUBLE OBTAINING ISDN or switched 56 service from your local phone company. Neither service is available everywhere. Right now ISDN service is concentrated in the business districts of major metropolitan areas (see "ISDN Lines in the U.S."). Switched 56 service is more widely available but is not universal. Even in areas where switched digital services are available, phone company representatives may not know ISDN and switched 56 exist, or they may not know them by those generic names. Each phone company has its own names for these services. Pacific Bell, for example, has an ISDN service named Centrex IS and a switched 56 service named CenPath. Fortunately this picture should improve during the next year as

varies depending on the type of service the phone company offers). Pacific Bell charges \$30 to \$40 monthly per switched digital line and \$15 per conventional voice Centrex line. You also pay connect charges at standard voice-call rates. Lower-cost switched digital services are available in some parts of the United States and should become more widespread this year.

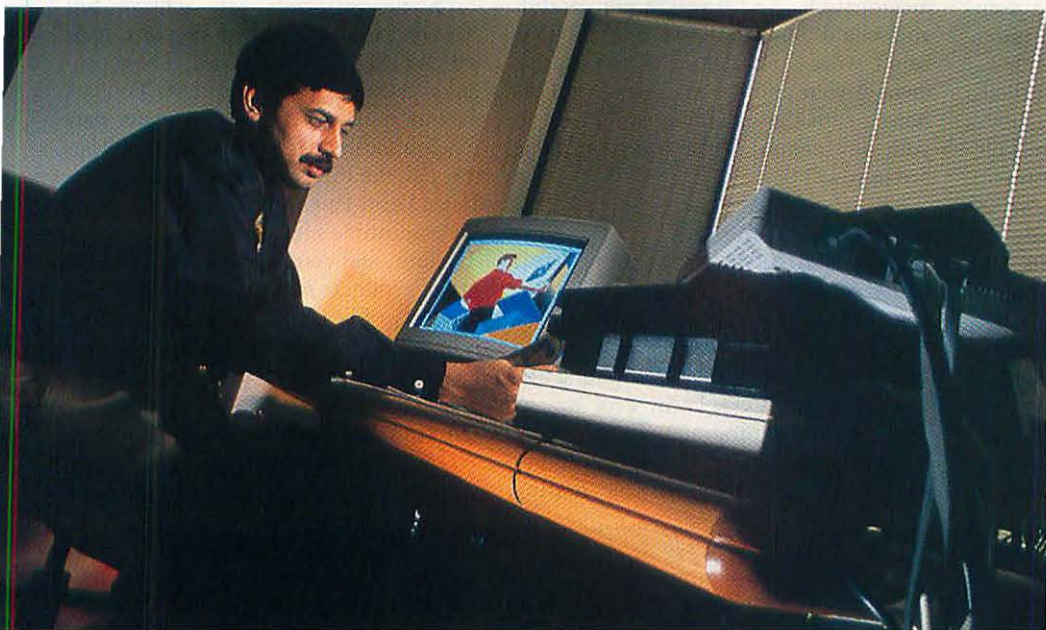
If you plan to make ISDN or switched 56 calls outside your state or service area, you must choose a long-distance company and pay it for those calls. Switched digital calls cost the same as ordinary voice calls on AT&T, MCI, and Sprint.

To get ISDN at your building, you must be located within about 2 miles of a phone company central office that has switching equipment for routing ISDN calls. This distance will increase to about 3½ miles as telephone companies install new switching equipment over the next few years. For switched 56 service you must be within about 3½ miles of a central office with switched 56 switching equipment. The geographical areas served by central offices vary widely; they are roughly the size of—but by no means coincide with—zip code areas. If you are farther away than the maximum distance, the phone company must run a high-speed dedicated line from a switched digital central office to your phone company central office or directly to your building. You pay a monthly fee for full-time use of that line and also pay by the call for calls that must be routed beyond the central office. A dedicated line is generally not economical unless you install at least six ISDN or switched 56 lines on it.

Inside Your Building

NEITHER BASIC-RATE ISDN (TWO B channels and one D channel) nor switched 56 service requires special wiring inside your building. Basic-rate ISDN service, like ordinary voice service, uses two of the four wires routed to common RJ-11 modular jacks. Switched 56 service requires either two wires or four, depending on the specific type of service your phone company offers. You can usually replace an existing voice line with basic-rate ISDN or switched 56 service without any wiring change inside the building.

To use an ISDN line, you must install a terminator, called an NT1, to maintain



Macworld uses switched digital services to send files of the magazine's pages to Digital Pre-Press International, a San Francisco prepress service bureau. Files are sent—with no transmission errors—at 64,000 bits per second. Previously, files were copied onto disk cartridges and sent to the service bureau by messenger.

central office. Calling beyond your local telephone company's central office becomes more complicated, especially for ISDN. The transmission rate drops to 56,000 bps because that's the maximum for the trunk lines that carry calls outside a central office. Likewise, calls outside your service area (as depicted in your telephone book), state, or country run at 56,000 bps.

For example, *Macworld* and DPI are served by the same central office in San Francisco and can transfer files at 64,000 bps over an ISDN line. But when *Macworld Japan* places an ISDN call to *Macworld* in San Francisco, the two communicate at 56,000 bps. Still, that transfer speed is many times faster than a high-speed modem.

telephone companies install more ISDN and switched 56 services and promote them more aggressively.

Like names, charges for switched digital services vary among phone companies. Your local phone company may compound the cost of getting ISDN or switched 56 by requiring that you also have an unrelated service such as Centrex, which gives business customers PBX capabilities from the phone-company central office. Pacific Bell charges \$540 to \$650 to establish Centrex service and install two Centrex lines (its minimum) with a switched digital service on one of them. In addition to paying the phone company's installation costs, you must buy special equipment to attach to the phone lines (the type of equipment

signal quality on the phone-company lines. The NT1 terminator usually connects to your RJ-11 wall jack. It costs \$100 to \$300, and you must buy one that has been made for the switching equipment installed in your phone company's central office. As the switching equipment migrates to new standards over the next few years, you should have a wider choice of vendors. Switched 56 service does not need a terminator.

Connecting to a Mac

ALTHOUGH ISDN AND SWITCHED 56 services transfer data digitally, you can't connect them directly to a computer. You don't need an ordinary modem to convert digital data from the computer to analog data (sounds) or the reverse. Instead you need a device that prepares the digital data from a computer for transmission on digital phone lines. Think of it as a digital modem.

The ISDN digital modem is called a terminal adapter (TA). You can buy a freestanding TA from Northern Telecom, Fujitsu, Hayes, UDS/Motorola, and other companies for \$750 to \$2000. You can also install a TA inside any Macintosh with a spare NuBus slot. Apple should already be shipping its \$1099 ISDN NB Card. Apple's NuBus board and some of the freestanding TAs convert a second B channel to let you plug in a standard telephone, answering machine, or Group 3 fax machine. Alternatively, you can buy an ISDN telephone with an integral TA and data port for

\$500 to \$1000 from AT&T or Fujitsu, or for \$700 to \$1100 from Telrad.

Digital modems for switched 56 go under two names, depending on the type of switched 56 service your phone company offers. One is called a DSU/CSU (Digital Service Unit/Channel Service Unit) and the other is called a Data Unit. AT&T, Northern Telecom, UDS/Motorola, and others sell them. Some ISDN terminal adapters can also be used as switched 56 digital modems.

To further complicate the situation, digital modems are not all compatible with each other, nor is every digital modem compatible with all types of switching equipment used in phone-company central offices. You may be unable to call someone else who has switched digital service because your digital modems are incompatible. And if you're not careful, you could buy a digital modem that won't work with the switching equipment at your phone-company central office or with the switching equipment at your new central office after you move across town.

Using a Digital Modem

DIGITAL MODEMS WITH SWITCHED digital services can speed up file transfer, screen sharing, and remote network access. For simple file transfer between two Macs, you can use Microphone II, WhiteKnight, VersaTerm Pro, or another terminal program. To remotely operate (and exchange files with) another Macintosh, you can use screen-sharing

software like Timbuktu/Remote. Products like Farallon's PhoneNet Liaison and Shiva's TeleBridge let you access E-mail, file servers, and other network services from a remote Mac.

When used with a freestanding digital modem connected to the Mac's modem or printer port, none of these applications can take full advantage of switched digital speed. The Mac serial ports can run at 57,600 bps asynchronously, but today's system software, which handles serial communications for application programs, can't sustain that rate. The serial port can usually sustain a throughput rate of 19,200 bps—the exact speed depends on factors such as the speed of your Mac, the communications protocol, and the design of the application program.

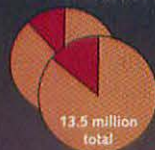
Some programs can achieve full switched digital speed if they are used with an ISDN NuBus board. These programs use the Communications Toolbox part of system software to transfer data synchronously at 56,000 bps or 64,000 bps through the ISDN board. At this writing, VersaTerm Pro and Timbuktu/Remote are compatible with the Communications Toolbox, and compatible versions of the other products mentioned above are in progress. (The Communications Toolbox is built into System 7 and can be added as an INIT to Systems 6.0.4 through 6.0.8.)

On Your Network

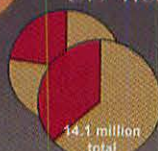
WITH SWITCHED DIGITAL SERVICES you can go beyond connecting a

ISDN Lines in the U.S.

Southwestern Bell



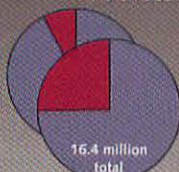
US West



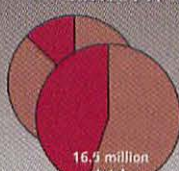
Pacific Bell



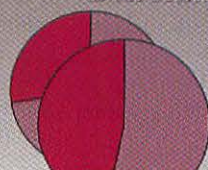
NYNEX



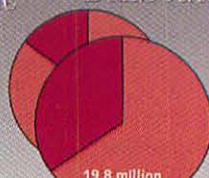
Ameritech



Bell Atlantic



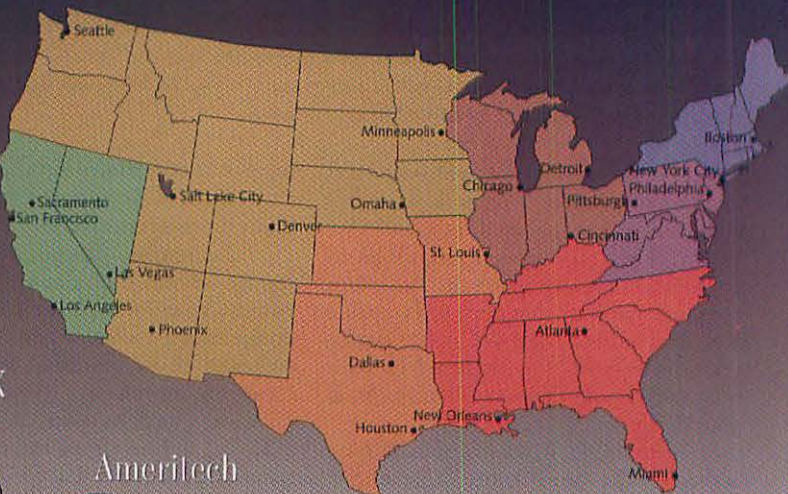
BellSouth



ISDN lines
Total lines

1991
1994

Each year, telephone companies across the country are installing more lines that have access to ISDN. Each pie chart represents the total number of telephone lines in a region—the more lines, the larger the pie chart. The charts in front represent figures for 1994; the charts in back represent figures for 1991. The red slices of the pies represent the percentage of lines with access to ISDN.



Mac to a distant network. You can interconnect multiple AppleTalk networks and share network services. For instance, *Macworld* affiliates in different countries can link networks to access each other's file servers and exchange E-mail by placing ISDN phone calls. After linking networks, a *Macworld* editor uses Timbuktu to preview large illustrations (by opening them on the distant network's file server) and to transfer files. Timbuktu or a new product, Aspects, let several users work on the same document simultaneously from separate Macs.

You can also access a distant network with the Chooser and connect to file servers, items shared with System 7's file sharing, and printers. If you use the Chooser to mount a distant file server or shared item on your desktop, you can copy files to or from the server with the Finder. With applications that take advantage of System 7's publish and subscribe technology, you can include live copies of material from a distant file server or shared disk. If someone changes the original material, your documents are automatically updated across the switched digital network link. Applications that use System 7's program-linking capability to share services, such as MacProject II 2.5 and Claris Resolve, could be located on remote networks.

To set up a switched digital link between AppleTalk networks, you connect each network to a router, each router to a modem, and each digital modem to a switched digital phone line. The router examines packets of data traveling on the local network and routes packets headed for the distant network across the phone line.

Some routers, such as Farallon's \$395 PhoneNet Liaison, are software that run on any Macintosh connected to the network. Hardware routers connect independently to the LocalTalk cabling. They include Engage Communication's \$1895 SyncRouter, Shiva's \$599 TeleBridge, Solana Electronics' \$2195 H-Server, and International Transware's \$899 TransTalk. Although the PhoneNet Liaison and the TeleBridge routers cost less, they communicate asynchronously at only 19,200 bps to 38,400 bps. The other routers communicate synchronously at the switched digital service's full 64,000 bps or 56,000 bps.

The History of ISDN

1960 More than 30 years ago the telephone company realized it could make more money by digitizing the public telephone network. A digital network would allow combining multiple calls on a single transmission path, increasing the carrying capacity of the copper wire already installed worldwide. In the sixties the phone company began digitizing long-distance calls.



1980 The past decade has seen a large increase in the amount of data sent over the telephone network by computers. The computer's digital data must be converted to analog data (sounds) before it is sent over the partly analog telephone network, and then converted from analog back to digital upon receipt; modems handle these conversion chores. At most, modems send and receive data at 19,200 bps (most modems work at even slower speeds—9600 or 2400 bps), wasting a good deal of the available 64,000 bps available on a telephone call.



1990 Full-speed data transmission is possible on a completely digital telephone network. Local phone companies are now digitizing the "last mile" (also called the local loop) between the telephone-company central offices and individual businesses and homes.



Routers made by different companies are incompatible, and more compatibility problems exist between routers, digital modems, and phone-company central-office switching equipment. In setting up its international file server, for example, *Macworld* first tried H-Servers, found them to be incompatible with something in Tokyo, switched to SynchRouters, and is currently evaluating TransTalk routers for its enhanced network-security options. Other people in Tokyo, New York, and Paris, however, have used H-Servers without any trouble whatsoever.

To make your network more secure, some routers let you restrict access by users on linked networks to specific zones in your network. Without this zone-blocking control someone at *Macworld*

could accidentally print a document on DPI's imagesetter—a costly mistake. Some routers offer other security provisions that help keep hackers out of your network.

Experienced users say network performance across a switched digital link rivals that of a direct connection to a LocalTalk network with five to ten active users. Apparently a private 56,000-bps or 64,000-bps connection using a hardware router approximately matches an individual's share of a 232,000-bps LocalTalk or PhoneNet-type connection. Of course performance declines when several people actively use an ISDN or switched 56 network connection simultaneously. Your choice of digital modem and router may also give you lower performance.

Not only are switched digital services fast, they are also extremely reliable. You can't transfer multimegabyte files frequently using ordinary modems and voice phone lines without failures due to line noise. But *Macworld* editors routinely use ISDN to transfer tens of megabytes across town and across the Pacific without any failure. Other ISDN and switched 56 users report the same reliability—no errors, period.

ISDN Today

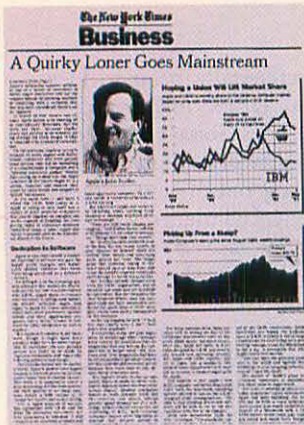
SWITCHED 56 AND ISDN PROMISE a lot and deliver it to some Macintosh users, but don't hang up your modem just yet. You'll still need it to connect to commercial information services, national E-mail services, and electronic bulletin boards. And if you sometimes access files and E-mail on your office

network or your office Macintosh from home or a hotel room, you'll want a modem for that too. Switched digital services can't help you with those connections today.

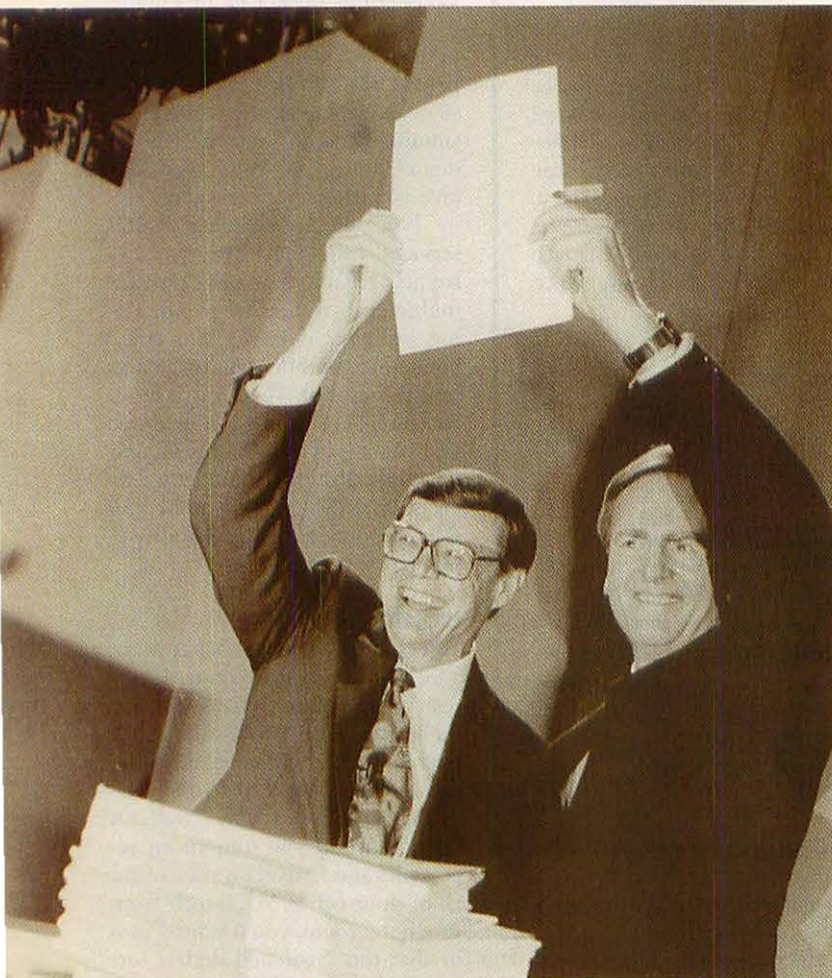
Right now those most able to take advantage of ISDN or switched 56 services are businesses needing to link locations and transfer lots of data regularly but not constantly. The rest of us must anxiously wait while switched digital services come to our telephone prefixes. **m**

See *Where to Buy* under Digital data for contact information.

Contributing editor LON POOLE has written about new technology for *Macworld* since its first issue. His latest book is *Macworld Guide to System 7* (IDG Books Worldwide, 1991).

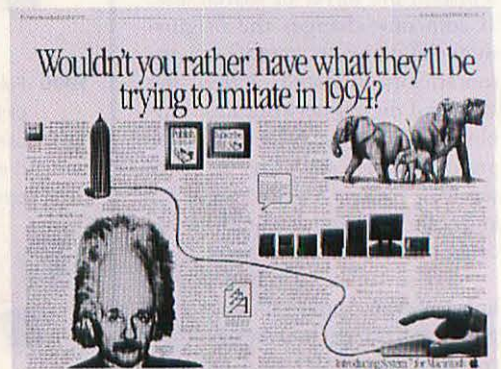


Year in Review



This photo has nothing to do with stock options of corporate executives. Jack Kuehler, IBM, and John Sculley, Apple, announce the deal of the year.

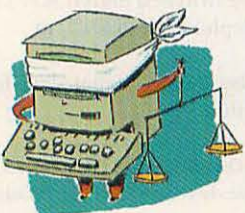
Apple announced QuickTime and true portable computers. The Microsoft suit drags on, overshadowing the industry. Apple announced its largest layoff and profit losses ever. John Sculley traded in four years of development work for an IBM pact. We'd like to think the worst is over . . .



Award for Best Subliminal Message

Did Apple really intend to show the mouse in this ad connected to IBM's Atlanta headquarters?

Top Legal Actions, or the We're All Friends in This Industry Department



- Apple-HP, Microsoft suit
- Apple Corps settlement with Apple Computer
- Apple stockholder suit over 1983 Twigg drive
- Apple stockholder suit over spring price drop
- Apple settlement with minority employees
- FTC probe of Microsoft

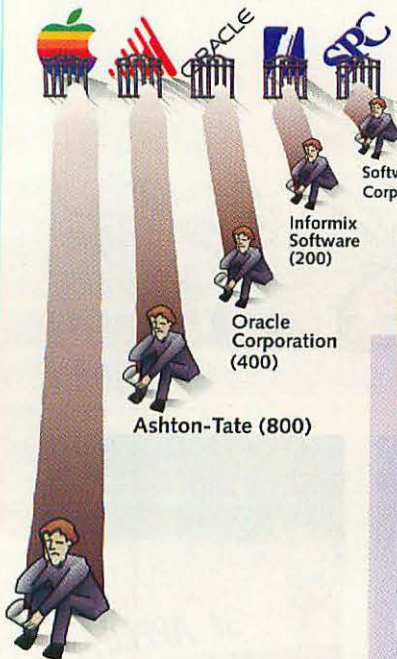


So will we all grow to look like Michael Jackson someday?

Toshiba ad portraying Mac user as *Australopithecus*.

The Economy Is in Recovery

Layoffs in the computer industry



Apple Computer (1500)

Where Are They Now Department (Apple developers)

- Don Casey (now at Wang)
- Lotus Marketplace
- Jasmine Technologies
- Lotus 1-2-3 for the Mac



Nathan Schulhof, formerly of
Jasmine



Top Ten Bill Gates Epithets

- *Forbes*: Cocky Bill Gates
- *Forbes*: Second Richest Man in the U.S.
- *Fortune*: Longtime Wunderkinder
- *Newsweek*: [the] Whiz They Love to Hate
- *New York Times*: Mr. Software
- *Playboy*: Soft Icon
- *Seattle Post*: Impish Bill Gates
- *Time*: 800-lb. Gorilla
- *Business Month*: Silicon Bully
- *U.S. News & World Report*: Market Mover



It Sure Melts My Butter Department

From the *Playboy* interview of Siskel and Ebert.

Ebert: What frustrates me is that Gene could make life so much easier for himself and save himself so much trouble if he would get himself a Macintosh computer. . . .

Playboy: Why won't you buy him one?

Ebert: I'm not going to give him no Macintosh as a present.



Apple Still Leaks from the Top

John Sculley preannounces the PowerBooks in April of 1990.

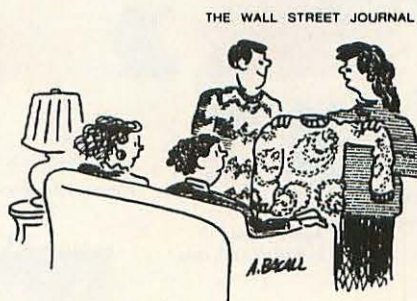
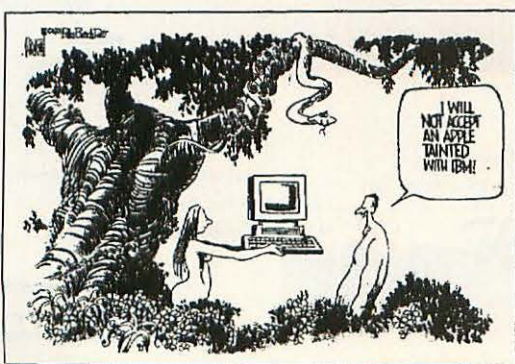
Where Are They Now Department (Apple)

- Apple employee collective bargaining
- Apple IIe board for the Macintosh LC
- Speedstart program
- Wireless computing
- Machandwriter
- Kinder, gentler Apple
- TrueImage
- Apple consumer division
- Apple investment in British RISC chip technology
- Ethernet boards



Machandwriter

The Macintosh in Cartoons





Apple Customer Support's Most-Often-Asked Questions

Why won't my computer recognize my hard drive?
What's SCSI?
What's termination?
My machine crashes when I...
My computer says I don't have enough memory...
I just bought it.
How do I get Mode32?
Who is my local reseller?
How long do I have to stay on hold?



Just Plain Bugs Department

Computer Millionaires



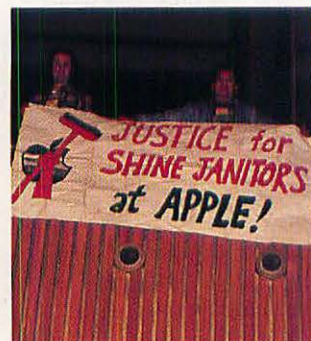
Source: Forbes Magazine



Actually, he runs the accounting department; his brother is in tech support.
Jasmine booth at Macworld Expo features live chimp, adding to the zoo-like atmosphere.

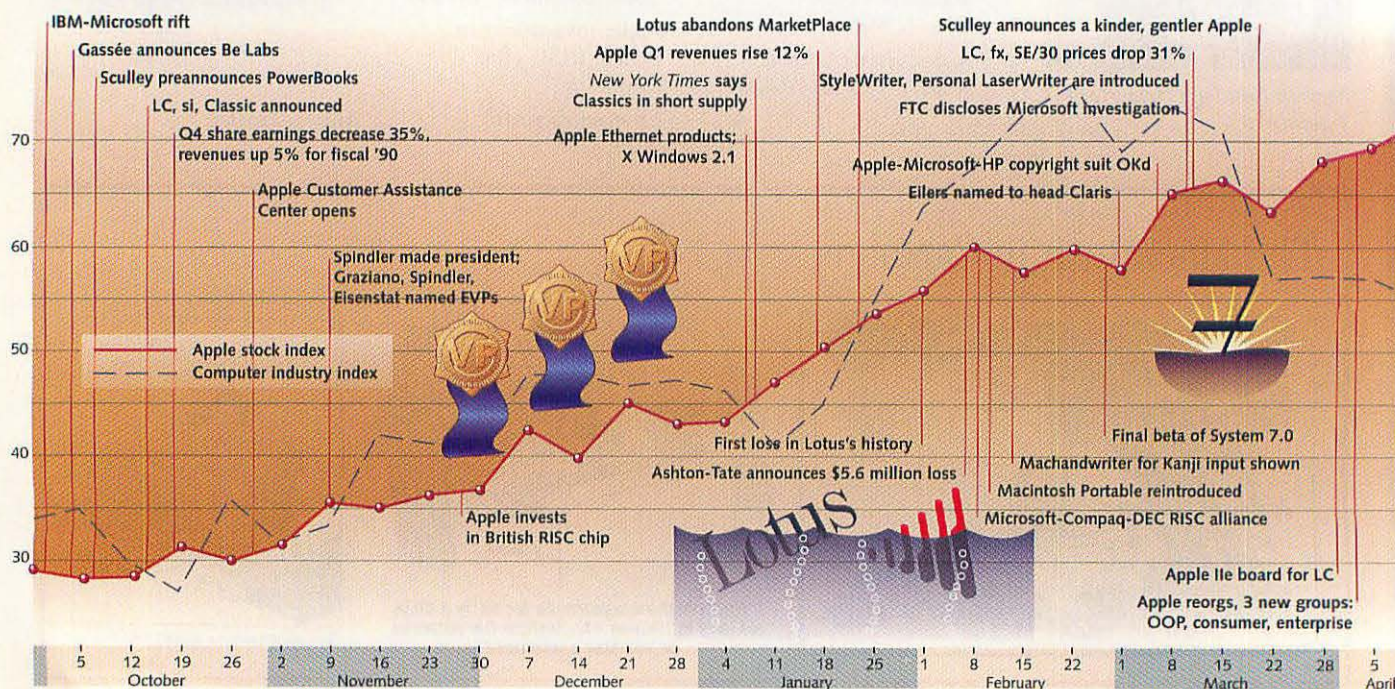


We assume she had to check some luggage.
And that she's stronger than she looks. Martin Marietta ad features a tot using a Mac Portable on a plane.



And to think I used to support Cesar Chavez.
Apple janitors disrupt the annual stockholder meeting in their efforts to unionize the janitorial work force at Apple.

Year at a Glance





Top Stock Sellers

(Dollar amounts from Apple stock sold during 1991)

Mike Markkula
\$20.56 million

Albert Eisenstat
\$10.91 million

John Sculley
\$5.35 million

Kevin Sullivan
\$4.32 million

Peter Crisp
\$2.22 million

Sören Olsson
\$2.06 million

Joseph Graziano
\$1.45 million

Fred Forsyth
\$1.44 million

Ian Diery
\$1.14 million

Edward Stead
\$0.80 million

Joseph Arena
\$0.69 million

John Moon
\$0.58 million

Michael Spindler
\$0.51 million

Say What?

During a speech in Japan in October 1991 Sculley announces a 1992 version of the LC with a CD ROM drive... six months after killing the Fast Eddy project, a Mac LC computer with a built-in CD ROM drive.

The 7 seas.
The 7 deadly sins.
The 7 voyages of Sinbad.
The 7 wonders of the world.
The 7 colors of the spectrum.
The 7 articles of the U.S. Constitution.
And of course, Snow White and the 7 dwarfs.

The number 7 is a favorite of Sculley's, and he has been known to use it to describe the size of his company.

We might have added the Seventh Seal.

Apple creative services' copy likens the announcement of System 7 to the seven wonders of the world.

Cache Switch

040 Processor Cache:

v7.0.1

☐ Faster (Caches Enabled)
 ☒ More Compatible (Caches Disabled)

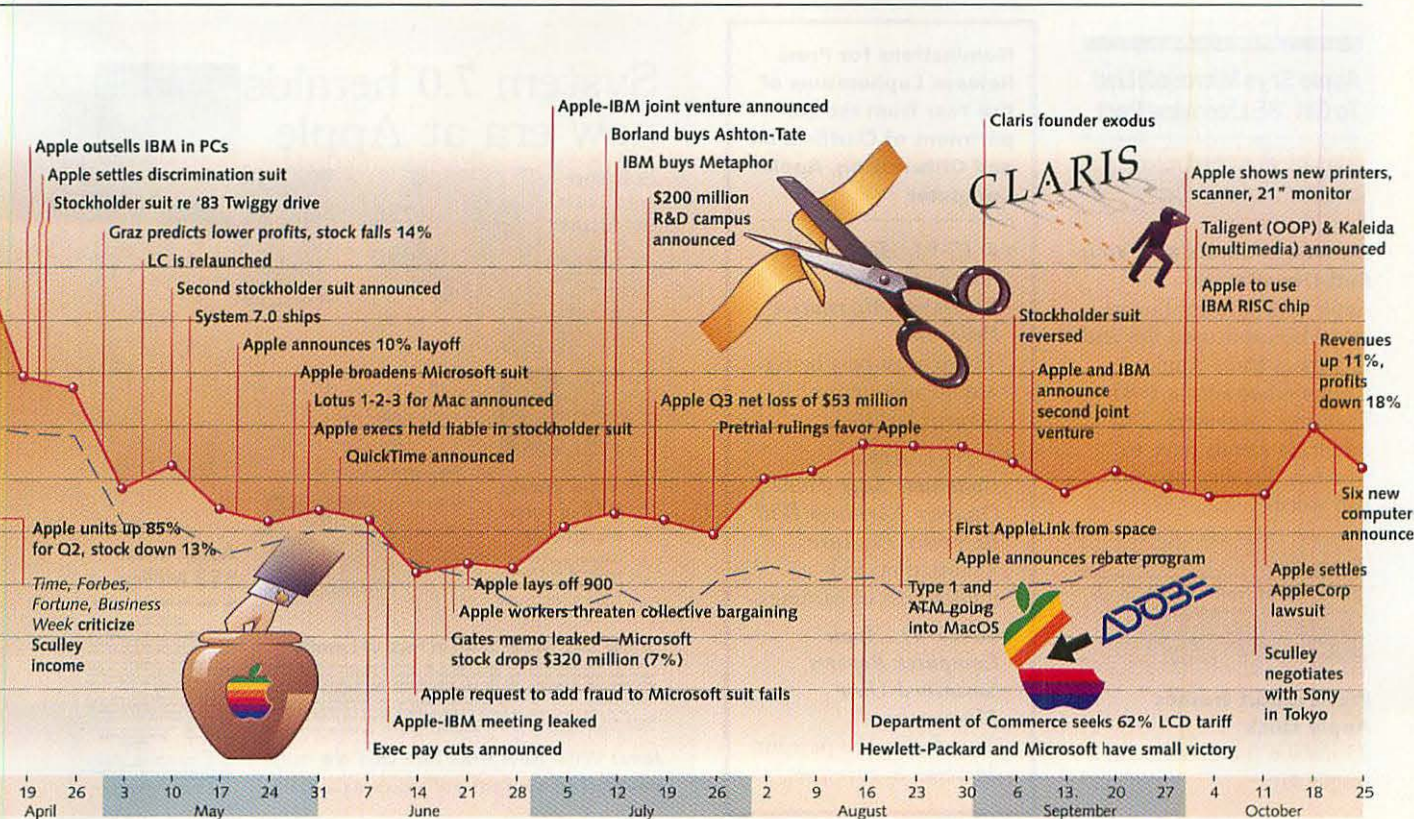
Some applications will not work correctly when the processor's caches are enabled.

But you only paid \$8000 for it!
Best Dialog Box of the Year Award for a utility that ships with Apple's new Quadra computers.



Perhaps Ritalin would help?

Borland CEO and founder Philippe Kahn strives for most unusual CEO photographs by posing with musical instruments, sailboats, and motorcycles.



Headlines of the Year

THURSDAY, FEBRUARY 11, 1992

TECHNOLOGY Ken Siegmann

Hewlett-Packard Is Ready to Launch Snake Attack

Hewlett-Packard Co., the Palo Alto-based computer manufacturer, has been getting better up in the workstation market for more than a year.

HP's competitors—most notably top workstation vendor Sun Microsystems—have been going with Hewlett-Packard's advanced for called RISC II. It has been strong sales 1990 were 100,000 units, a 10% increase over 1989.

Software Publishers Taking Aim At Pirates

By Ken Siegmann
Chronicle Staff Writer

Illegal copying costs the \$182 billion personal computer software industry between \$6 billion and \$7 billion in lost sales, the Software Publishers Association says.

March or April, and DEC is preparing a set of low-cost workstations for introduction around the same time.

Composite Index Falls 0.2% as Investors Retreat Following Missile Hit in Israel

The Dow Jones Industrial Average fell 0.2% to 2,814.14 on Thursday, Feb. 11, 1992, as investors retreated following the missile attack on Israel.

The S&P 500 index fell 0.1% to 2,814.14. The Nasdaq Composite Index fell 0.1% to 2,814.14. The New York Stock Exchange volume was 1.1 billion shares.

We understand the missile strike, and open season on pirates, but what's the deal with the snake attack?

FONT FUTURE

TrueType Will Help Resolve the Font Puzzle

Windows 3.1 Promises to Make TrueType a Standard, But Some Confusion Will Undoubtedly Plague Users

By Robert C. Case

Since Windows' arrival, doing with fonts has been a little bit more of a puzzle. A complicated system, that technology on the desktop may finally offer users a straightforward solution.

TrueType, created by Apple Computer and licensed by Microsoft for its upcoming Windows upgrade, promises to change the way Windows users create and share documents. And because it will be an integral part of the operating system, and thus be available to all users, it will be a significant step toward a standard that is integrated and broad support to applications and printer developers.

This TrueType will be given away to users at no charge. It will be a standard, said Daniel W. Harris, a Macintosh evangelist and author of "Macintosh: The Way to the Future." "Most people don't see fonts as they do use them. That's why TrueType is going to be very important to Windows because it



Four left to right: Dirk Lorenz, Ulrich Kling, Michael Kling, and Michael Kling. They are the German team that won the Egg-Laying Pig contest.

Setting up a challenge to Intel

21 firms unite to create a new computer standard

Yes, but they're certainly a happy-looking group of oinkers. This is what the Germans would call *die eierlegende Wollmilchsau*, an egg-laying woolly milk pig.

Sony to Supply Apple Computer With Portable PCs

By JACOB M. SCHLESINGER

Staff Reporter of THE WALL STREET JOURNAL

TOKYO—Sony Corp. said it will produce portable personal computers for Apple Computer Inc., filling a major gap in Apple's product line.

A Sony spokeswoman said the company received a request earlier this year from Apple to build the PCs. She wouldn't say whether it would be a laptop or notebook-sized machine, or give any further details of the arrangement, referring all further

Best Kept Secret of the Year Nomination: Sony-Apple Deal



Yo! We've got the "do more" part down. Could you explain the "work less" part to us once more?



Apple's Sculley Meets the Lotus 1-2-3

Apple Computer CEO Steve Jobs, right, and Lotus Development Corp. President John W. Rayburn, left, met in the new Lotus 1-2-3 spreadsheet program for the Macintosh computer.

Maybe that's what happened to 1-2-3!

AT DEADLINE

Apple Says Microsoft Lied To Get '85 Licensing Pact

Microsoft Corp. used lies and threats to force Apple Computer Inc. to sign a 1985 licensing agreement key to the development of Windows, Apple told a federal judge last week. Apple filed a motion to expand its 1988 complaint against Microsoft and Hewlett-Packard, asking that its 1985 licensing agreement with Microsoft be declared invalid, a move a Microsoft attorney described as "disgraceful." U.S. District Judge Vaughn set a hearing on the motion for June 14.

—Tom Quinlan

My Dad Is Gonna Kick Your Butt Department

Apple tells a federal judge that Microsoft used lies and threats to force Apple Computer to sign a 1985 licensing agreement. But inquiring minds have to wonder, did they use any bad words?

Business

Profit report trashes Apple stock

Lowered Mac profit margins

Apple's profit report for the third quarter of 1991 showed a significant decline in profit margins for the Macintosh line, leading to a drop in the company's stock price.

Profit report trashes Apple stock

23 million shares traded in a single day.

Nominations for Press Release Euphemisms of the Year from the Department of Clarification and Obfuscation, Apple Computer

- 4-17-91: Apple Rolls Out Extensive Commute Alternative Program
There must be a better way to announce a 10 percent layoff.
- 5-1-91: Apple Computer Says Third Quarter Earnings Will Be under Pressure
Translation: \$53 million loss of earnings.
- 10-17-91: Apple Computer Reports Sustained Unit Momentum
Translation: 18 percent decrease in revenues.

System 7.0 heralds new era at Apple

Software sets path for future

By Don Peck

A new era is at hand for Apple Computer Inc., for thousands of desktops of Macintosh are going to be replaced by the new System 7.0. This new version of the Macintosh operating system will be the first to be released in the new year. It will be a significant step toward a standard that is integrated and broad support to applications and printer developers.

Apple paring 10% of corps worldwide

Company won't reveal number of local layoffs

Apple Computer Inc. is paring 10% of its worldwide workforce, a move that will result in the loss of approximately 10,000 jobs. The company is not revealing the number of local layoffs.

Apple Like Ghost Town in Face of Layoffs

Work has virtually ground to a halt in many departments of Apple Computer Inc., as employees await the arrival tomorrow of sources said.

Jeez: With new eras like this we may never ship system software again.



Francis Ford Mac
Most Gratuitous Use of a Mac as a Prop in an Interview Award to Francis Ford Coppola in the public television program "Memory & Imagination."

This would be one of a thousand points of light?
Embezzler with coke and his Mac. Roger McGuinn's "King of the Hill" music video.



The Mac in Film



Yuppie Puppy Dog Care
At last, someone actually using a Mac. Yuppie dog care center with Mac.



As if Star Trek sequels weren't bad enough:
Star Trek: The Next Generation. Apple Computer spends a fortune making a "Star Trek"-style promotional film.

The Power to Crush Other Kids
Truth in Advertising Award to "Saturday Night Live" for its satire of a Macintosh ad.



Only Sighting of an LC in a Video Award
Marsha Mason's family in the television series "Sibs." Perhaps that explains initial slow sales of the LC?



Pedagogue as Demagogue
Special Award: Leni Riefenstahl School of Film. Apple Computer commercial.

Classical Mac
Professor Bill McNeill, one Mac user we can respect, interviewed in the PBS series "Columbus in the Age of Discovery."



My dad's a psycho and we've only got a crummy IIGS.
Arnold Schwarzenegger comforts a student in *Kindergarten Cop*.



Here's a Mac user we can relate to.
The computer for the rest of us, now typified by users like Gilbert Gottfried. 3rd Bass's "The Gas Face" music video.





O P E N I N G U P

E-MAIL

Macworld Lab takes five E-mail packages for a spin

E

LECTRONIC MAIL, OR E-MAIL, HAS ENTERED THE Macintosh mainstream. With more than 450,000 Mac E-mail users, E-mail is fast becoming a necessity for office environments. Since the last time we took a close look at Mac-based E-mail (see "E-Mail: A Postal Inspection," June 1990), two new players from the DOS world—cc:Mail and WordPerfect Office—have joined the fight for Mac E-mail users. And the two leading companies offering Mac E-mail, CE Software and Microsoft, have added significant new features to their programs. Macworld Lab put the five major E-mail products through their paces.

cc:Mail

CC:MAIL MACINTOSH PLATFORM PACK, FROM cc:Mail, a Division of Lotus, is a relative newcomer to the Mac E-mail market, although it currently is the best-selling E-mail package for DOS machines. cc:Mail is one of the few programs that lets you send graphics with any message and then view the graphics within the E-mail message without requiring a special form. And when it comes to saving messages, you have three options—save the message as a text file, file the message in cc:Mail format on the server in a user-defined folder, or append the message in cc:Mail format to an archive file on your hard drive. The last two options are particularly useful when you need to send replies at a later date.

cc:Mail lets you create a Post Office Box file for each "post office" (the program's name for a

server) that you connect to. Items like the path to the post office and your name are stored in the Post Office Box file, simplifying the log-on procedure—just requiring a double-click on the appropriate Post Office Box file. cc:Mail also encrypts messages.

These positive features pale in comparison to cc:Mail's shortcomings, however. The program doesn't offer customizable E-mail forms. And cc:Mail is the one program in the group that incorporates all the mail-handling intelligence in each user's Macintosh, rather than in a server. If you want to have the Mac periodically check (poll) the server for waiting mail, you have to install a Notify INIT. Too-frequent polling adds unnecessarily to network traffic as the INIT polls the server to find that no mail's waiting.

In its latest version, cc:Mail for the Mac has an improved interface that is more Mac-like in its treatment of windows and menu options. But if you want more than just a simple E-mail system for your local area network (LAN), and choose to install gateways to other systems or support more than one server, cc:Mail's DOS origins show through. All of cc:Mail's gateways run only on a

by Dave Kosiur

DOS-based cc:Mail server, although they are accessible to Mac clients. Remote access is also allowed only to DOS servers. Plus, if you want the servers to exchange their user directories to form a company-wide directory, you need another DOS-based cc:Mail option.

Macworld Lab devised a series of tests to measure how long each program takes to save, read, delete, and send messages with or without enclosures; to log on to the mail server; and to send messages during heavy network traffic (see "Enclosure Speed"). Most of the lab's tests showed little performance variation among the products. In two areas where the performance diverged more clearly—sending messages with enclosures and processing simultaneous messages from six different clients—cc:Mail came in second to InBox (see "Simultaneous Messages"). That performance was not good enough to overcome cc:Mail's other inadequacies, however.

InBox

SITKA'S INBOX HAS NOT CHANGED much since its original release as a Sitka product two years ago. It's still packaged in two kits—InBox, which is a part of Sitka's TOPS Network Bundle, and InBox Plus for Macintosh, which is sold separately. You can get your feet wet

with InBox (it supports up to 20 users), but for routing mail between multiple servers or for supporting more than 20 users, look to InBox Plus.

InBox's distinguishing features are variable fonts (although InBox allows only one font per message), user-defined aliases for any address, automatic updates of address files, and the ability to search mail by subject or sender. Like CE Software's QuickMail, InBox Plus allows you to create file-based mail systems on non-Macintosh platforms. Administration is still accomplished via the Macintosh-based program, but this approach allows you to support non-Mac clients on other networks fairly easily. Unlike QuickMail, InBox Plus does not require that the file system be compatible with Apple's AppleTalk Filing Protocol (AFP).

InBox showed the best performance marks in critical areas: it was the fastest E-Mail product in sending messages with enclosures and most consistent in processing simultaneous clients—impor-



Ben Luce, left, Blake Barber, and other students at the Warren Grade School in Warren, Vermont, use QuickMail to communicate with each other, teachers, school board members, and the school principal.

tant points in its favor. But InBox lacks support for sound or graphics within messages, offers no customizable forms, and does not allow remote access to the server. These serious deficiencies greatly reduce its overall standing.

Microsoft Mail

WITH THE INTRODUCTION OF Microsoft Mail 3.0 for the Mac in 1991, Microsoft caught up to the market leader, QuickMail, on most items on a features checklist. Microsoft also made a few changes to its server technology to alleviate network traffic. The company added extensive options to its server reporting feature and an automatic mail-file backup feature for the server.

Many of the changes in Microsoft Mail benefit the user, which is where the program lost points in our past review. For example, you can now create your own personal address book, which contains addresses from the global Microsoft directory and the custom addresses you create (such as to mail a message to an MCI Mail correspondent). Mailing groups can now be defined by either the administrator or the user.

In a major change to the user interface, Microsoft added folders for storing messages in their native Microsoft Mail format. These folders actually exist on the server, not on your Macintosh. The advantage of keeping folders on the server is that you can access any folder from any Mac on the network or over a remote link. Unfortunately, this approach poses a problem for network managers—it uses up server disk space.

Microsoft Mail now lets you send more than one enclosure with a message. You can send as many enclosures as you

E-Mail Checklist

Here are some features to consider when shopping for an E-mail system.

Server architecture In file-based architecture (used in cc:Mail, InBox, and QuickMail on non-Mac servers), the intelligence to run the mail system resides in the client Mac, with only data stored on the server. This makes it easier to place a server on different computer platforms. In server-based architecture (used in Microsoft Mail, QuickMail on Mac servers, and WordPerfect Office), the intelligence of the mail system is divided between client and server, which allows the server to perform automatic maintenance, such as backup.

Message filing To avoid overloading large or busy networks, look to QuickMail, the only program that lets you file messages into mail folders on your own Mac. You'll inevitably forget about messages filed on the server, and waste space. But if you need remote access to your messages, go with server-based message filing for easy retrieval. Along these lines, QuickMail, Microsoft Mail, and WordPerfect Office store a single copy of any message (or enclosure), independent of the number of recipients—further saving server space.

Server management If you're only using one mail server, remote management isn't an issue. But if you have many servers, remote management (offered by all programs reviewed here except QuickMail) can save time by allowing you to handle almost anything from your Mac. Detailed server reports also assist in troubleshooting. Microsoft Mail offers the best detailed, customizable reports; cc:Mail comes in second.

Gateways Links to mainframe- or minicomputer-based mail systems can be important in large corporations. And for companies of all sizes, linking Mac-based E-mail to AppleLink, MCI Mail, or CompuServe can be an important, if not essential, efficiency measure. Using gateways (offered by the E-mail package or by the online service itself) to these systems lets you use your Mac's E-mail interface for all communications—local or international.

E-MAIL ROUNDUP

like, so long as you don't exceed the total kilobyte limit specified by the administrator. Microsoft Mail also allows users to dial in to the server via modem to send and receive mail.

Microsoft Mail's test results were its main weakness; it was the slowest for processing simultaneous messages, and also trailed the leaders by a wide margin in enclosure speed tests. If Microsoft can find a way to move its messages faster, Microsoft Mail's excellent feature set will make it a strong contender.

WordPerfect Office

WORDPERFECT OFFICE 3.01 FOR MACINTOSH, from WordPerfect Corporation, is a long-awaited newcomer to the Mac market. This new system combines four desk accessories for E-mail, scheduling, note taking, and file manipulation. The E-mail and scheduling DAs work together particularly well.

The complete package offers some innovative features. For example, WordPerfect Office can track a message that you've sent and tell you if the servers have received the message, which recipients have read the message, and who has deleted it. All of this is accompanied by the date and time of each action—a handy tool, and more detailed than QuickMail's mail log. (Offices that use this feature might want to establish guidelines, however, to ensure that it is not used to invade individual privacy.)

WordPerfect's experience with DOS-based office automation has helped it incorporate some interesting security features that its competitors lack. For example, you can conceal the subject for a message when it's sent so that the recipient will see it only when he or she opens the message. You can also add a security label to any message to inform the recipients of the message's degree of sensitivity; but unfortunately, options for encryption and hiding the subject must be handled separately. You also can encrypt a message so that only the recipient can read it using the WordPerfect Office client software—a message intercepted on the network would be unreadable.

Like Microsoft Mail, WordPerfect Office's E-mail lets you store messages in folders kept on the server. You can enclose up to 100 files with any message, with no size limits.

One of the major changes in the E-mail interface over the past two years has been the introduction of customizable forms. QuickMail probably has the largest variety of forms, but WordPerfect Office outdoes QuickMail by providing full support for color in the forms. This customizability extends to the messages

Product	cc:Mail	InBox	Microsoft Mail 3.0	QuickMail 2.5	WordPerfect Office
Vendor	cc:Mail Division of Lotus	Sitka	Microsoft	CE Software	WordPerfect
Price	\$495, 25 users \$595	20 users \$299; InBox Plus: 50 users \$995, 100 users \$1995	mail server \$395; 5 users \$395, 20 users \$1349	5 users \$399, 10 users \$599, 50 users \$2499, 100 users \$4699	\$149, 5 users \$495, 20 users \$1495
CLIENT					
Notification options	audio and/or visual alerts	audio and visual alerts	audio and/or visual alerts	audio and/or visual alerts, open DA	audio and/or visual alerts
Create messages offline	○	○	○	●	● (for personal addresses only)
Customizable message forms	○	○	●	●	●
Send graphics in message	●	○	●	○ ¹	●
Send sound in message	●	○	●	●	●
Number/size of enclosures	20/no limit	no limit/ no limit	no limit/set by manager	16/2MB	100/no limit
Encrypted messages	●	○	●	○	●
Public message board	● (10 max)	○	○	● (1 max)	○
Conferencing	○	○	○	●	●
Filing of messages	on server; archive to local hard drive	on server or local hard drive	on server	to local hard drive	on server
Search messages by subject or sender	○	●	○	○	○
SERVER					
Remote access to server	DOS only ²	○	●	●	DOS only ²
Server architecture	file-based	server-based or file-based	server-based	server-based (Mac), file-based (others)	server-based
Server-initiated WAN connections	● ²	○	● ³	●	● ²
Remote management of server	●	●	●	○	●
Copies of message stored	1 per message	1 per addressee	1 per message	1 per message	1 per message

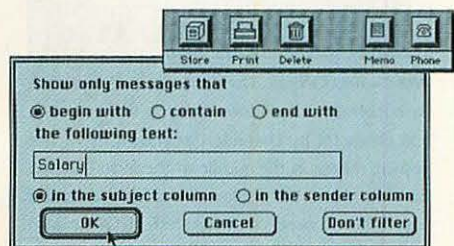
● = yes; ○ = no. ¹ Graphics can be used in forms. ² With additional software from E-mail vendor. ³ With third-party software.

themselves, as a WordPerfect Office user can select any available typeface and size on a character-by-character basis.

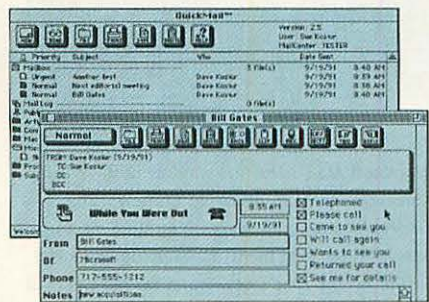
This package scored near the top in tests involving sending messages with enclosures, and was the fastest for sending messages only, although it placed in the middle of the pack for processing simultaneous messages.

Like cc:Mail, however, WordPerfect Office suffers from DOS roots. While Macintosh and DOS clients can use the same server whether the server is running on a Mac or DOS PC, additional features such as remote access and gateways to other systems can run only on a DOS-based server.

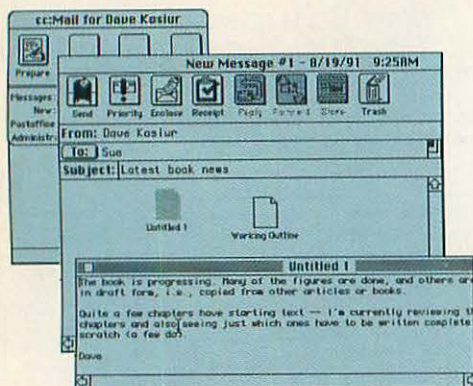
WordPerfect Office's addressing scheme also leaves something to be desired. Setting up custom addresses is awkward; you must include in the address the entire path to the server and any associated gateway, such as **MacCS:PCHost:EZLGate:Fax:"801-555-1234/cover page."** What WordPerfect Office needs here is a point-and-click method for constructing the address. (One good thing can be said for WordPerfect Office's addressing scheme—it's extremely flexible; in the above example, the stated path also includes the phone number for a fax and the selection of a cover page.)



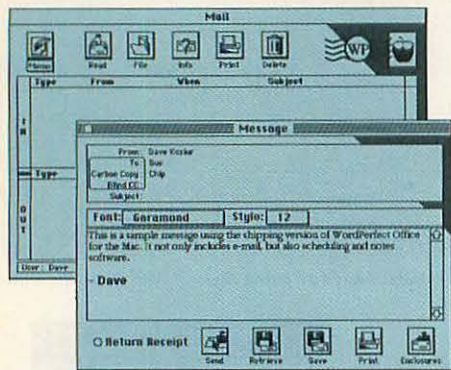
InBox InBox can search subject or sender lists for specific words, as shown here. The InBox interface is simple and uncluttered, with only two message types (Memo and Phone, as shown in the command bar at the top).



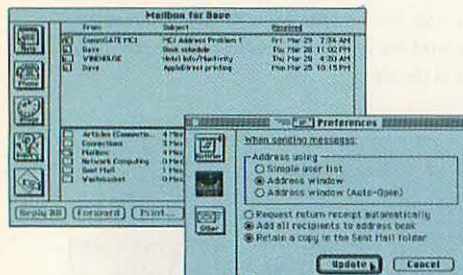
QuickMail QuickMail 2.5 added a Mailbox folder for incoming mail (see top line of rear window); the folders below the Public icon are user-defined. The front window is an example of QuickMail's standard phone-message form.



cc:Mail cc:Mail displays messages and enclosures as separate icons below the address space. In this example, the message icon has been opened to display the text of the message. An enclosure named Working Outline is also part of the mail. Unlike some of its competitors, cc:Mail does not offer customizable message forms.



WordPerfect Office The front window is the standard memo form; all forms let you size and style text character by character, as shown here. The pop-up menus in the middle of the form (labeled Garamond and 12) display all available fonts and sizes when clicked on. WordPerfect Office also provides full support for color in all forms.



Microsoft Mail The rear window of this display shows one of Microsoft Mail 3.0's new features—folders for storing messages. You store messages simply by dragging them to the appropriate folder, just as on the Mac's desktop, although the mail folders reside on the server. The column of icons at the left represents the types of messages that can be sent—the fifth icon in the list is for an AppleLink gateway. The front window shows Microsoft's new interface for setting user preferences.

Overall, this is a program to watch, if WordPerfect can alleviate these problems in future releases.

QuickMail

I SELECTED CE SOFTWARE'S QUICK-MAIL as the top E-mail product in 1990. With version 2.5, CE Software has improved its user interface and created more-robust server and telecommunications architecture.

The user interface now includes a folder for incoming mail in addition to personalized folders. However, QuickMail departs from the usual desktop interface—instead of dragging mail to folders in order to file a message, you use a pop-up menu.

Network managers should welcome QuickMail's feature—unique among the products reviewed here—of filing user messages on their own disks, rather than on the server, freeing disk space on the server. (This can be a prob-

MW

EDITORS' CHOICE

QuickMail is the easiest program to use in a mixed network of Macs and DOS machines. It has average speed, but QuickMail offers excellent user-interface and network-administration features and has greatly improved remote-access abilities.
Company: CE Software. **List price:** \$399 (five users).

lem in one case, however—when a remote user wants to see an old message that's been filed on a Macintosh in the home office.)

Passing messages to others now has more flexibility than before. If you care to forward a message, you can attach comments—something I longed for in past versions. And replies can be directed to the originator, the sender only (as in forwarded mail), or all original recipients. QuickMail also offers an online conferencing mode.

The Future of Electronic Mail

Before long, E-mail as we know it will probably disappear. Rather than use an E-mail desk accessory or application to send messages with enclosures, we'll probably all send and receive electronic messages within our regular applications. The first steps in this direction, at least for Macs, are the Application Programming Interfaces (APIs) offered by Microsoft and CE Software for their E-mail products.

As noted in the past review of E-mail products (see "E-Mail: A Postal Inspection," June 1990), some applications, such as Microsoft Excel, Microsoft Word, and Aldus PageMaker, had used the APIs to add E-mail support to their programs. You could send data from one spreadsheet to another, or place incoming mail directly into a page layout. But that's only the beginning of an important trend.

Our glimpse into what the future holds after such APIs is colored by some of the features of System 7, namely AppleEvents and interapplication communication (IAC). By using the AppleEvent Interapplication Messaging (AEI/M) interface, programmers can write their programs to exchange data, messages, and common commands (such as Save, Open, Quit) with other programs that accept AppleEvents. With AEI/M and Apple's networking support in System 7, this exchange of AppleEvents can happen between networked Macs.

Currently, E-mail programs offer two essential services missing from AppleEvents and IAC—directory and store-and-forward. But each E-mail package handles those services in its own way. Users of one package can communicate with users of another only through gateways—software protocols that vary in quality and speed and must be re-created for each package. Apple says that its recently announced Open Collaboration Environment (OCE) will simplify network communications by providing common directory and store-and-forward services, as well as adding encryption, and authentication—digital verification of who sent a message and that it has not been tampered with.

Compatibility problems between E-mail packages would end, because OCE would mediate all mail handling, passing messages through APIs. E-mail vendors could concentrate on improving the user interface and server reliability. Apple says it is working closely with E-mail vendors to ensure smooth upgrades when OCE ships. Apple also plans to integrate the Open Messaging Interface (OMI), a cross-platform messaging standard, as an API. OMI, developed jointly by Lotus, Apple, and IBM, should let users of the OCE exchange data and messages with users of DOS, Windows, Unix, and OS/2 computers.

Because any application—not just E-mail—could access the OCE, it could make message services intrinsic to all applications, opening new opportunities for collaborative computing across great distances.—Dave Kosiur and Charles Piller



WordPerfect Office was fastest for the Message Only test; for enclosures InBox had the overall fastest times, followed by cc:Mail and WordPerfect Office.

All tests were run with a single mail server installed on a Mac IIci that was

also an AppleShare 2.0.1 server and with Mac IIcx clients. Under No Load conditions, only the test client was attached to the server. For Normal Load, macros simulated the traffic of a 100-node network. For Heavy Load (Mail), macros

simulated a heavy work load for the mail servers by deleting many messages during testing. For the Heavy Load (Server) test, a macro copied a 403K file from the AppleShare server during testing.

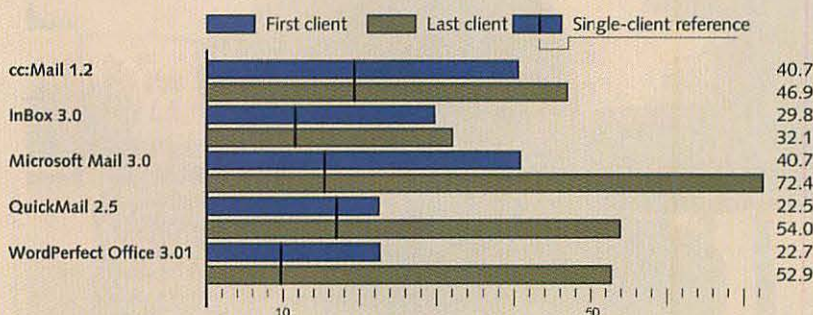
QuickMail 2.5 has switched over to storing a single copy of any message or enclosure on the server, regardless of the number of addressees. This approach, which has been adopted by most other mail programs, saves space and reduces disk fragmentation.

One of the major problems with older versions of QuickMail was its handling of modem links, both between servers and for remote users dialing a server. Garbled messages, interrupted sessions, and incomplete file transfers were fairly common. To solve these problems, CE Software switched over to using Apple's Communications Toolbox, which should prove more robust than the original QuickMail code (other telecom programs have used the Communications Toolbox reliably). And to make the remote user's task easier, the QuickMail Remote application was rewritten from the ground up—it too uses the Communications Toolbox and now sports an interface that's almost identical to that found in the regular QuickMail application (or DA if you're still using any System below 7.0).

QuickMail is the easiest program to use in a mixed network of Macs and DOS machines, because the server and client software for both operating systems are included in the same package. QuickMail further eases use in mixed networks by letting you install file-based

Simultaneous Messages

Times are in seconds.



To determine the programs' consistency of performance when a server is forced to queue messages, we timed the first and last finishers among six clients simultaneously sending a 512-byte message with an 80K enclosure. (For comparison, we timed a single client sending the same message.)

QuickMail and WordPerfect Office were the fastest in processing the first of the six clients, but InBox and cc:Mail showed the smallest gap between the first and last clients. This suggests that the latter two products perform more consistently under heavy traffic conditions. InBox was the fastest to process all six clients.

E-mail servers on any AFP-compatible file servers. (The only caution: you must have at least one Mac running the QuickMail Administrator program.)

In our lab tests, QuickMail responded sluggishly in enclosure speed tests, and was about average when taking on simultaneous messages. But overall, with its combination of excellent user and administrator features, its ease of use in a mixed network environment, and its

improved remote access abilities, QuickMail retains its superiority in an increasingly competitive E-mail market. **m**

See *Where to Buy* for contact information.

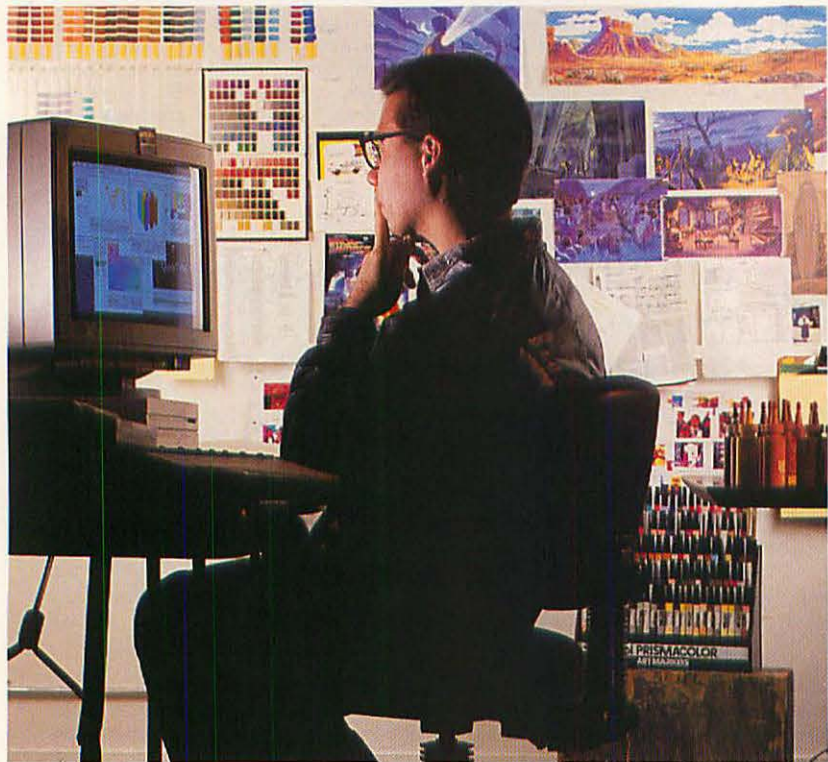
Contributing editor DAVE KOSIUR covers Macintosh networking. He is coauthor of the *Macworld Complete Networking Handbook* (IDG Books Worldwide, 1992).

Macworld Lab testing supervised by Tim Warner.

New tools mean instant

Quick

In the future, it is said, everyone will be famous for 15 minutes.



PHOTOGRAPHS BY ROBERT HOLMGREN

AT COLOSSAL PICTURES IN SAN FRANCISCO, JIM KOULIAS IS INVESTIGATING THE USE OF QUICKTIME FOR PRODUCING ANIMATION AND SPECIAL EFFECTS FOR BOTH TELEVISION AND MOVIES.

Right now, thanks to Apple's QuickTime, you can take a step in that direction by starring in your own 15-minute movie on the Mac's screen. (Well, maybe you'd better start with a 1.5-minute effort; QuickTime movies take up a lot of space.) Sure, the movie will appear in a small window, and it may look slightly choppy, but who's complaining? After many years of hype, digital video is finally real. You don't have to be a trained video editor to make movies on the Macintosh, and you don't need to buy expensive video-editing hardware or pay for sessions at a professional editing studio. With an investment of less than \$1000 (for a minimal setup), owners of any Mac model with a 68020 or higher CPU (and eventually any Macintosh) can import video clips and create, edit, and view QuickTime movies.

The beauty of these programs is that they're aimed at both video illiterates and video professionals. Even if you're just a beginner, you'll be able to drag icons around to do things like arrange scenes, alter a sound track, and add special effects.

In this article, I look at several QuickTime moviemaking products to give you an idea of what it takes to make movies on the Mac. (For information on additional video-related products, see "QuickTime Companions.")

QuickTime Basics

QUICKTIME IS NOT A PROGRAM, BUT rather a software architecture that lets developers incorporate time-based, or

movies on the Mac

Time

dynamic, media types—sound, video, and animation—as well as still images, into applications. Thanks to QuickTime, video is now a data type (like PICT images or text) that can be included in documents and copied and pasted between them. In addition to supporting time-based data, QuickTime supports compression schemes for animation, digitized photos, video, and graphics that make it feasible to compress these storage-hungry elements and automatically decompress them only when they're being viewed on screen.

In addition to supporting Apple's compression schemes, QuickTime's Component Manager and Image Compression Manager let other companies develop their own compression/decompression components (called *codecs*) and drop them into the System for higher rates of compression or specialized support for unique features. Compression schemes vary; some offer a high degree of compression at the expense of image quality. You should experiment with different codecs to see which compression method suits your needs.

QuickTime is currently a System extension but will eventually be incorporated into Macintosh system software. For a more complete explanation of QuickTime, see "QuickTime in Motion," *Macworld*, September 1991.

Just before the final version of QuickTime was released—and the first round of programs to make use of it came out—I looked at prerelease versions of several digital video products. The descriptions that follow are *previews*,

not reviews, since both the programs and QuickTime itself were still under development. If you want hands-on demonstrations of some of the applications described here, you can purchase Apple's QuickTime Starter Kit, which should be available by the time you read this (the price had not been determined at press time). The kit includes the QuickTime INIT, several utilities, and a look at what QuickTime can do. The kit's third-party shopping catalog features working (but limited) versions of several of the programs described here, and descriptions and demos of others. Also in the kit are reusable short videos and animations (like moving clip art), as well as sounds

by Erfert Fenton

plus three handy utilities from Apple: SimplePlayer for opening, playing, cutting, copying, and pasting movies (see "Apple's SimplePlayer"); Convert-to-Movie for turning PICS animations, Scrapbook sequences, PICT, SND, and AIFF (Audio Interchange File Format) files into movies; and PICT Compressor, which will perform JPEG compression on PICT images that will be readable in any application that currently supports PICTs. (JPEG stands for Joint Photographic Expert Group and is a compression standard for still images, including single frames of digital video.)

QuickTime movies, like other high-end graphics applications, currently leave owners of low-end Macs in the dust. In addition to the QuickTime System ex-



The QuickTime Team Pictured here, from left to right, are a few of the hardworking team members: George Cossey, Chris Thorman, Gary Woodcock, Jim Batson, Peter Hoddie, Bruce Leak, Sean Callahan, Mark Krueger, Lee Mighdoll, Ken Doyle, and David Van Brink as the pink flamingo.

tension, digital video applications require a Mac II or LC with at least 4MB of RAM (8MB is recommended); a color graphics board; 32-bit QuickDraw; and System 6.0.7 or later. If you want to import your own video clips, you need a video-capture board and a camcorder or videotape deck. You need plenty of space on a hard drive to store your movies; even with file compression, a few seconds of digital video can easily take up several megabytes of space. And make sure to defragment your hard drive regularly—fragmented drives slow down video capture.

My video editing setup certainly met my husband's practical definition of multimedia, "it's multimedia if you need to make more than one trip to the car when taking it somewhere." I used a Mac IIx with 5MB of RAM, an 80MB hard drive, and a 24-bit video board; a removable-cartridge drive and several 44MB cartridges; a video-capture board and RCA jack for video input; a video 8 camcorder; and an external speaker so that I could listen to the audio portion of my tape during capture. Optional, but handy, equipment included an 8mm videotape deck and a CD ROM drive. Once I got the equipment set up, I bulldozed all the extraneous files off my hard drive to make room, dug out a few dozen camcorder cassettes I'd recorded over the years, and proceeded to make some movies. Jumping into video editing was easier than I expected, although it took me a while to wrestle with the numerous hard-

ware components, cables, power cords, and video jacks that made up my system (the back of my Macintosh looked like a nest of snakes engaged in a spaghetti fight). I had to do some homework on the software end of things as well, actually resorting to reading manuals, but the programs I looked at were on the whole well designed and easy for video beginners to learn.

Video In

THE FIRST STEP IN MAKING A DIGITAL movie is to convert analog video to digital format with a video-capture board. I looked at two boards, SuperMac Technology's VideoSpigot Pro and RasterOps' 24STV. Other video-capture boards are available from Computer Friends, Radius, Neotech, E-Machines, Mass Microsystems, VideoLogic, and others, although I didn't get a chance to look at them for this preview article.

With a video-capture board installed, you can attach a camcorder or VCR to the Mac and digitally record videotapes in 8-bit or 24-bit color. Video can be digitally recorded and played back via QuickTime applications at 1 to 30 frames per second (fps), including mono sound, in a window that ranges from 160 by 120 pixels to 320 by 240 pixels.

I also looked at several QuickTime video-capture and editing programs in various stages of development: Light Source's MovieTime, SuperMac Technology's ScreenPlay (included with the

VideoSpigot board series), Adobe Premiere, DiVA's VideoShop, and Letraset's MediaBlender.

Light Source's MovieTime software works with NEC's \$2100 PC-VCR (a computer-controlled S-VHS/VHS videocassette recorder) and a video-capture board such as RasterOps' Video ColorBoard 364 (\$1099), 24STV (\$1799), or 24XLTV (\$3999). The MovieTime application provides on-screen buttons to control the PC-VCR as you record scenes from videotape at 1 to 15 fps. As you view the video on the screen, you mark beginning and end points for a clip. You can use on-screen buttons to fine-tune the in and out points; the PC-VCR achieves frame accuracy by placing digital time code on the videotape to mark the location of every frame. To improve the quality of the digital movie, MovieTime *oversamples* video as it's captured, recording frames at a large size and then reducing them to remove artifacts. It also employs *frame differencing*, which reduces the size of a movie and increases the frame rate by storing only the differences between frames, rather than each whole frame. Once a video is converted to digital format, you can save it as a QuickTime movie and play it back in any application that supports QuickTime.

SuperMac Technology provides another way to capture video and save it in QuickTime movie format. SuperMac's VideoSpigot board (\$499 for Mac IIsi or LC version; \$599 for a NuBus version for other Mac II models) is a 24-bit color digital frame-grabber that captures video in real time from a TV set, laser disc player, videotape deck, or video camera. VideoSpigot Pro (\$1899 for Mac IIsi; \$1999 for NuBus version) includes a frame-grabber and display board: 8-bit graphics on large-screen displays (19- or 21-inch) and 24-bit graphics on small-screen monitors (12- or 13-inch), as well as a QuickDraw graphics accelerator. VideoSpigot comes with SuperMac's own codec, which offers a higher rate of compression than Apple's video compressor. A companion program called ScreenPlay lets you view a video sequence on the screen, mark beginning and end points for recording, save the clip as a QuickTime movie, and trim the movie by adjusting beginning and end points (see "SuperMac's ScreenPlay").

Video Editing

THE BOARDS AND PROGRAMS MENTIONED in the previous section let you capture and save video clips, but there's more to moviemaking than just amassing raw footage (or perhaps "raw bittage" in

this case, since we're dealing with digital information instead of film or videotape). You'll want to arrange clips in a particular order, add or delete sound, and perhaps add special effects. That's where video editing programs come in. I looked at three such programs, Adobe Premiere, DiVA's VideoShop, and a simple little utility called (for now, at least) MediaBlender.

With Adobe Premiere (\$495) you can import QuickTime movie clips, graphics, and animations and assemble them into a QuickTime movie. The program has several windows for movie construction and editing. You import clips into the Project window, where a color *picon* (picture icon) of the first frame in the clip appears, along with information on the clip's file type, image size, and duration. You can type additional comments about each clip if you wish. Once you've imported all the clips you need, you place each one by dragging its picon to the appropriate track in the Construction window (see "Adobe's Premiere"). The Construction window has A and B video tracks (allowing you to create transitions between scenes), a special-effects track, a superimpose track, and several audio tracks. Special effects include filters (you can use the program's built-in filters or

create your own in Adobe Photoshop) and scene-transition effects such as wipes, fades, and dissolves.

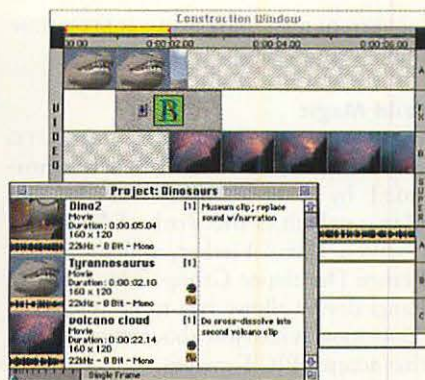
I made a few QuickTime movies using a preliminary version of SuperMac's VideoSpigot Pro board and a prerelease version of Adobe Premiere. Except for the glitches one expects in prerelease products, the process worked quite well. Although my test movies were fairly short, consisting of four or five clips and a few scene transitions each, effects like fades and dissolves made me realize I could create something that resembled a short movie, rather than just a series of clips strung together. I realized how much I was enjoying myself when I passed up a chance to go to the movies, telling my pals I'd rather stay home and make my own.

DiVA's VideoShop (\$595), like Adobe Premiere, lets you assemble a sequence of stills, animations, and digital video clips into a QuickTime movie. Designed for Macintosh users rather than video editing professionals, the program uses Mac terminology and techniques (dragging icons, for example) whenever possible.

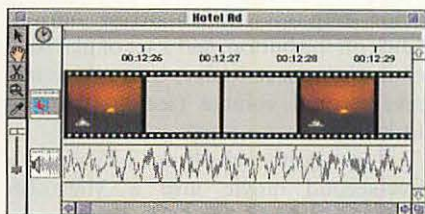
Unlike Premiere, VideoShop can capture video directly from a camcorder or VCR if you have a video-capture board such as RasterOps' Video ColorBoard 364 or 24STV. You might also want to use video clips from the Image Bank CD Collection, a CD ROM library of QuickTime movie clips that is included with VideoShop. The program has a Find command that helps you locate clips from the dozens you may have available on a hard drive or CD ROM.

In addition to incorporating video and animations, you can also make movies from other applications with the program's Screen-to-Movie utility; for example, you might want to add animation to an Excel pie chart for a business presentation.

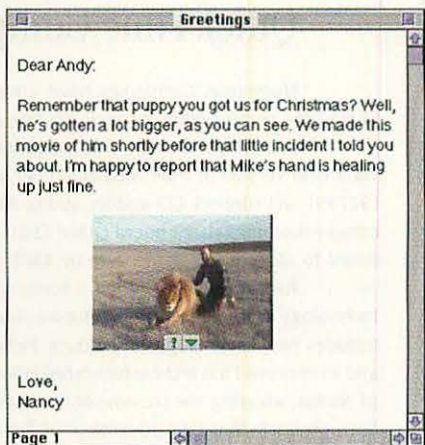
VideoShop displays available video clips as *micons*, moving icons that play an abbreviated version of the associated video. You drag micons for the clips you want into the program's Sequencer window, which initially consists of one video track and one audio track (see "DiVA's VideoShop"). Adding tracks allows you to create scene transitions or superimpose one clip on another. You can even resize and reposition a clip to create a video inlay; for example, you could show an animated graphic in the upper left corner to help illustrate a concept presented in the main video window. VideoShop's special effects include filters (from VideoShop or Adobe Photoshop) and transition effects such as fades and dissolves. You can play your



Adobe's Premiere Premiere offers two video tracks, allowing you to apply special effects such as wipes, dissolves, and fades between scenes. You can also apply masks using Photoshop's alpha channel to superimpose one clip on another.



DiVA's VideoShop The Sequencer window of DiVA's VideoShop initially offers one video and one audio track. You can add more tracks as you put together a movie.



A Moving Epistle Thanks to a public domain utility called Wild Magic, you can paste video clips into many types of documents, just as you can copy and paste PICT images today.

final movies from VideoShop or other applications that support QuickTime movies, add them to an interactive HyperCard presentation (VideoShop includes a command that lets you place video clips as buttons into HyperCard stacks), or even print to videotape if you have a video-out board installed.

MediaBlender, from Letraset, is pretty straightforward; the utility lets you split a QuickTime movie into segments, allowing you to trim the movie or rearrange scenes. Check with Letraset



Apple's SimplePlayer Apple's SimplePlayer allows you to play back QuickTime movies created in a number of programs.



SuperMac's ScreenPlay ScreenPlay lets you view live video on the screen as you capture it, trim a video clip by adjusting its beginning and end points, and save the clip as a QuickTime movie.

for current marketing plans; at press time these were in flux.

Wild Magic

WITH ALL THE PRODUCTS I HAD TO play with, the most fun I had was provided by a little utility called Wild Magic, which is the work of Jean Eric Garnier, David Fischer, and the Apple France Developer Group. This Control Panel device allows you to paste QuickTime movies into just about any program that accepts PICT images.

You simply open a QuickTime movie with a player utility (Apple provides one in the QuickTime Starter Kit), choose Select All, and copy the movie. Then, open any document and paste in the movie. In the document, you'll see a color graphic with an arrow button. Click on the button, and a set of playback controls appears: play, stop, forward, reverse, and volume (see "A Moving Epistle").

I got quite a thrill out of pasting a five-second movie into a Microsoft Word document (which is either a reflection of how wonderful this utility is or a sad comment on the quality of my

life). The word processor document, movie, Wild Magic cdev, and QuickTime INIT all fit onto a single 800K floppy. Somehow pasting a movie into a letter, copying the letter and its associated movie onto a disk, and playing the movie back on another Mac made me realize that digital video is actually here.

Wild Magic will be available on various online bulletin boards and through user groups. The program is in the public domain, which means that anyone with access to QuickTime movies can paste them into documents and distribute them to friends and colleagues.

Is QuickTime on the Right Track?

DIGITAL VIDEO CERTAINLY HAS BOTH pros and cons. QuickTime movies can be easily transferred from one Mac (II) to another, and you don't need anything extra to play them (you might need a removable cartridge or hard drive to transport them, however). They're stable; you can play or copy a QuickTime movie over and over without affecting the image quality. And if early indications mean much, digital video will be a cost-effective tool in the commercial

video industry, where graphic artists will be able to create video storyboards and comps for much less than it would cost on a professional editing system.

But the image quality of digital video isn't up to broadcast TV standards yet (and is not designed to be within the current architecture of QuickTime); the files take up lots of room (with Apple's compression routine set to medium quality, I managed to fit about four and a half minutes of QuickTime movies on a 44MB removable cartridge); and it still costs real money to put together a serious desktop video workstation.

Right now, a sophisticated Mac-based video-capture and editing system costs several thousand dollars above and beyond the cost of the Mac. A moderately priced system like the PC-VCR (\$2100) adds features like time-code striping and improved image quality through oversampling. High-end systems, like those from Digital F/X and Avid Technology, provide more sophisticated video editing capabilities including frame accuracy with SMPTE (Society of Motion Picture and Television Engineers) time-code striping (the standard for movie and television production time codes) and the ability to create edit-decision lists for assembling finished tape. Although you won't find many people waltzing out and buying a high-end system just to create QuickTime movies, the QuickTime movie format is being added as an output choice for owners of such systems.

Fortunately, digital video quality will only improve with the emergence of new compression and acceleration technologies, mass-storage devices are getting bigger and less expensive, and low-end workstations can be put together; you can slurp in video and create QuickTime movies with a \$499 VideoSpigot board, edit them with a program like MediaBlender (or a more costly but more sophisticated program like Premiere or VideoShop), and paste your results into your existing programs with the free Wild Magic utility.

Digital video still has a ways to go. But even if it needs to get smaller, cheaper, and better before it's widely accepted, it's here now and it works. If you want to get started with the newest data format, the tools you need are waiting for you. ■

See *Where to Buy* under QuickTime Tools for contact information.

QuickTime Companions

Numerous companies have announced new QuickTime movie products or QuickTime compatibility for their existing products.

RasterOps' current video-capture boards will soon be QuickTime-compatible via a new version of their MediaGrabber software, and a new board called MediaTime (\$2799) will support CD-quality audio. Also in development at RasterOps is a video-compression piggyback board called QuickPack, which will allow the 24STV or 24XLTV board to capture full-frame (640 by 480) video to disk.

Radius recently signed a licensing agreement with Apple to use a new video technology called Touchstone in future video products. Developed at Apple, Touchstone includes new technology to produce flicker-free 24-bit video, video window resizing, and an improved bus architecture called HBus (HBus overcomes the performance bottleneck of NuBus, allowing the transmission of 24- or 32-bit data). Radius is expected to introduce products that take advantage of Touchstone in early 1992.

New Video Corporation has announced the EyeQ Delivery Board/Capture Adapter, a \$7500 system that lets you capture and compress full-motion video in real time and play QuickTime movies with stereo sound at 30 frames per second on a screen as large as 16 inches. (By contrast, QuickTime movies typically play in mono sound at 10 to 15 fps in a 160-by-120-pixel window, or at somewhat slower rates in a 320-by-240-pixel window.) The EyeQ board can compress video and sound in ratios of up to 160:1 using DVI, Intel's video-compression and playback technology. Digital F/X will include the board in a future version of its Video F/X video-production system.

SuperMac Technology has announced Digital Film (at press time no price was set), a video processing board that uses JPEG compression and can produce full-screen video at 30 fps with stereo sound.

QuickTime enhancements are available for software developers as well. Storm Technology has announced a JPEG accelerator called QuickPress (\$1500 for developer's kit), which speeds QuickTime JPEG compression by as much as 15 times. The Company of Science and Art (CoSA) offers PACo (\$179), a compression/decompression utility for playing digital video and animations. PACo eliminates start-up delays and reduces the amount of RAM needed to run a digital video movie.

ERFERT FENTON is a free-lance technical writer and a longtime *Macworld* contributing editor. She resides in San Jose, California, with her husband and three Macs.

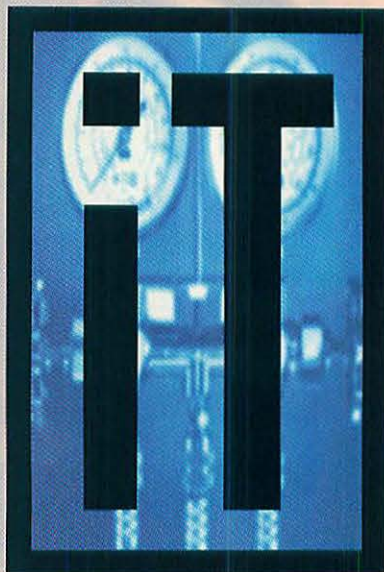
Images & Tools is a two-day event sponsored by *Macworld* magazine. You will learn firsthand from well-known computer-graphics artists and designers how they do what they do. They'll demonstrate the techniques they use to create high-quality electronic art, and they'll showcase the tools (from Aldus FreeHand to Adobe Photoshop) that help them do it.

Invited speakers will take you through the creative process in their areas of expertise, from concept to finished piece, and then open the floor to questions. **Jim Ludtke** is a graphic designer and 3-D animator who began his career as an airbrush artist. **Ron Chan**, formerly with the *San Francisco Chronicle*, illustrates for advertising agencies, design firms, and magazines. **Arne Hurty**, senior designer/informational graphics at *Macworld*, was the winner of the first Aldus FreeHand illustration contest, published in *Print* magazine. **John Hersey** is an illustrator whose work has appeared in *Esquire*, *EQ*, *LA Style*, and the *Washington Post*. **Erik Adigard**, who studied fine arts in France, came to computer illustration through his experience in video animation. **Sanjay Sakhuja** is president of Digital Pre-Press International, a PostScript-based, state-of-the-art color-separation house. **John Knoll**, one of the creators of Adobe Photoshop, currently works for Industrial Light & Magic.

Conference registration is \$495 and includes all sessions, conference materials, breaks, and luncheons. Checks must be made payable to Macworld Communications and sent to: Sandy Butler, Events Manager, Macworld Communications, 501 Second St., Suite 500, San Francisco, CA 94107.

For additional information contact the Events and Conferences department; 415/267.1745;

fax 415/442.0766.



IMAGES & TOOLS

ELECTRONIC
ART & DESIGN
CONFERENCE

+

THURSDAY, APRIL 30 &
FRIDAY, MAY 1, 1992

AT THE

MARK HOPKINS

INTER-CONTINENTAL
HOTEL,

SAN FRANCISCO

+

3D STRUCTURE, SURFACES, AND MOVEMENT

3-D MODELING HAS COME A LONG WAY TOWARD BEING

When I first discovered a few years ago that I could create photo-realistic three-dimensional graphics on the Mac, my imagination fired. I visualized magnificent marbled structures, bizarre 3-D characters, and futuristic-looking cars and spaceships. But the memory and processing limitations of the Mac and the lack of high-end software forced me to scale back my expectations—I decided to start by creating a graphic of a truly reflective but transparent sphere.

OK, I admit it. I'm talking about a simple glass ball, but even this proved challenging. I created the sphere, set a camera angle, defined the glass surface properties, and told my Mac to render the image. Ten hours later my Mac beeped to signal that it was done with the task. I opened the file to see what I had

created, only to be confronted by a murky gray circle, not at all close to the shining orb I had expected.

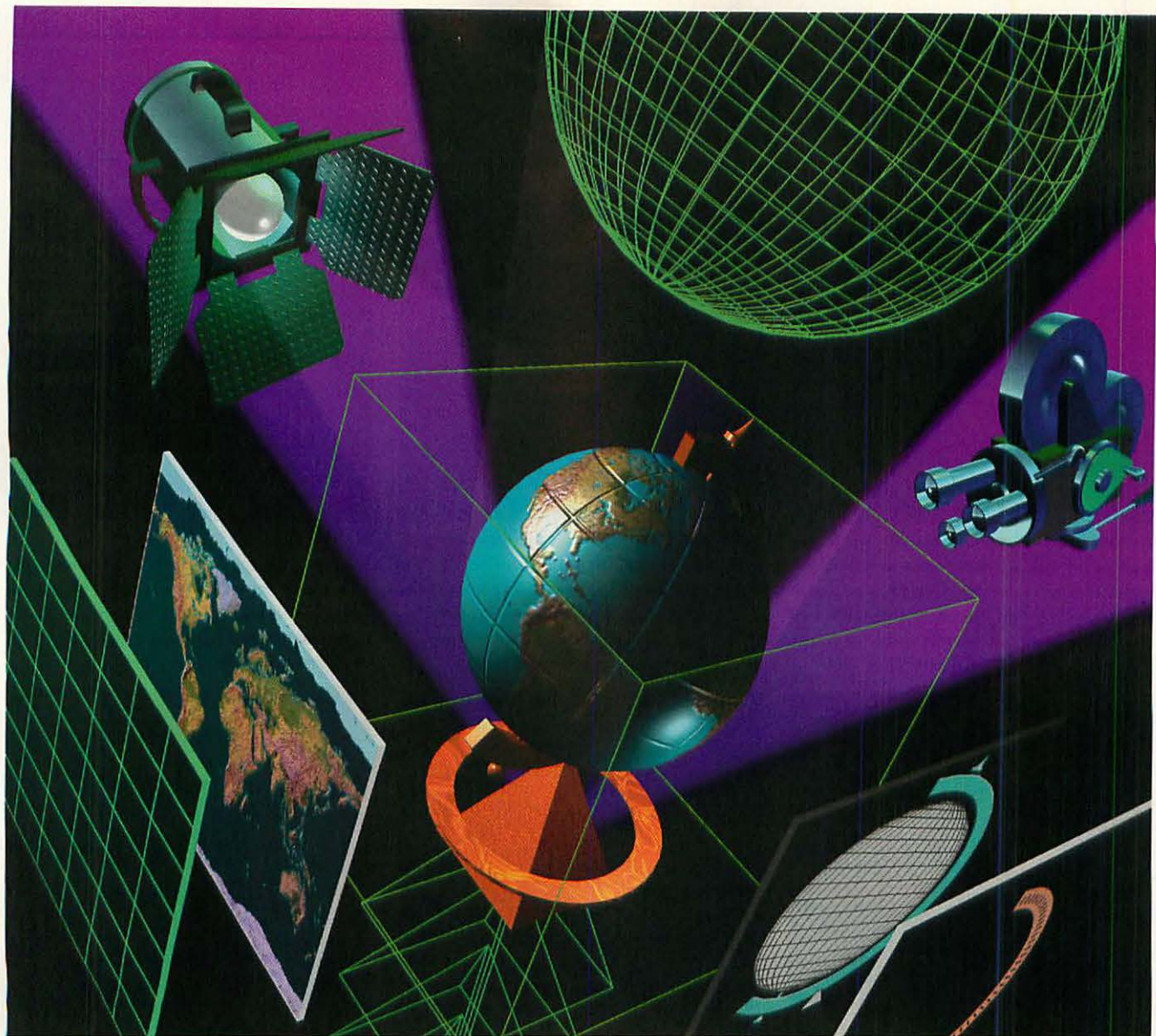
The capabilities of the Mac and of 3-D software have changed a lot since then. And although 3-D modeling, rendering, and animation are still young fields, a variety of solutions for creating 3-D graphics on the Mac have appeared. My struggles with the glass ball have turned to struggles with much more complex images—birds flapping across the screen and characters lip-synching to an audio track.

Modeling Basics

ALL 3-D PROGRAMS OFFER EASY ACCESS to a variety of primitive shapes—such as spheres, cylinders, cones, and cubes—that you use as building blocks. And all

3-D programs let you take a 2-D outline, such as a font or logo, and push, or *extrude*, it into 3-D space to give it depth. Beyond these basic elements, each modeler has various tools for creating more-complex objects.

Most low- to mid-price packages support either *lathe* or *cross-sectional* modeling (see "A Visual Guide to Features" for definitions of modeling terms). Programs that use the lathe technique offer slight variations. With Aldus Super 3D, for example, you can edit the location of points on a finished lathed object via the reshape command. While you can't edit lathed objects with StrataVision 3D and Ray Dream Designer, Ray Dream lets you extrude a spline curve along a Bézier path, with the option to resize the outline at various points along the object. All



JIM LUTHE

TRULY USEFUL, BUT RENDERING TIMES ARE STILL SLOW

three programs are adequate for entry-level modeling.

In contrast, MacroMind/Paracomp's Swivel 3D Pro uses cross-sectional modeling. Once you understand the basis of cross-sectional modeling, Swivel is a great tool to use. It provides a quick and easy way to create a variety of shapes, some of which can't be created with the lathing method. Specular International's Infini-D offers both lathing and cross-sectional modeling, but the program's modeler is not as intuitive as Swivel, often producing inconsistent results.

Working on Detailed Images

HIGHER-END MODELERS OFTEN support *spline-based* modeling—a technique that's good for creating smooth curved surfaces. VIDI's Presenter Professional

offers the ability to adjust 3-D shapes with Adobe Illustrator-type Bézier handles. Byte by Byte's Sculpt 3D and 4D and Ray Dream Designer let you build extruded and lathed objects with two-dimensional spline curves. With Sculpt 3D and 4D, you can then adjust the splines in 3-D space. A new program, Alias Research's Alias Sketch, which was released just as this article went to press, allows you to sketch free-form curves and surfaces anywhere in 3-D space. Any portion of a curve can be refined in three dimensions. Alias Sketch costs \$1995.

Spline-based modeling has its limitations, however. For instance, the control points you use to adjust a shape often

govern 20 or more vertices (or individual points) on an object. Each vertex is adjusted every time you move the control point. To adjust a single vertex on an object, you need a modeler that has vertex-level editing capabilities.

AT&T Graphics Software Labs' MacTOPAS, Sculpt 3D and 4D, Swivel 3D Pro, Aldus Super 3D, and autodessys's Form Z, offer vertex-level editing. While vertex-level editing provides definitive control over positioning of the various points on a model, it can be time-consuming and exacting work. It's certainly more difficult than using a spline-based modeler, especially when it comes to creating smooth surfaces.

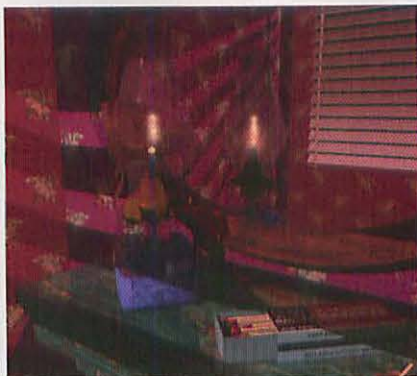
BY DAVID D POOLE

Making a Model Realistic

Artist Jim Ludtke created the mantelpiece scene in DXF format. Each company used imagination and product features to render the model.



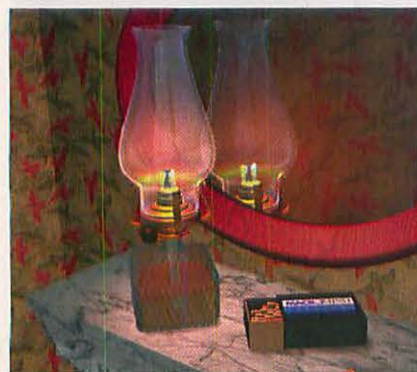
ElectricImage Animation System The texture maps on the walls and mirror frame were created in Pantechnicon's TextureSynth. Spotlights were used to simulate the lamp's light. The Glossy attribute was used on the globes to simulate the flame's glow. The mirror's glass texture was created in Adobe Photoshop.



Infini-D Texture maps for the walls and mirror frame are from Form and Function's Wraptures CD. The mantel uses a texture map from D'pix's Folio1 CD. The marble is 100 percent color map and 30 percent reflection map. The globe's texture comes with Infini-D. The matches have procedural surfaces.



MacRenderMan Shaders from Showplace Looks and the Valis Group's VG Shaders were used for the walls, mantel legs, wick, oil, metal pieces, floor, globe, and globe base. Texture maps for the mirror frame and mantel were created in Showplace. Reflections in the mirror and mantel were done with MacRenderMan.



MacroMind Three-D For the wallpaper, a scanned image was cropped and repeated. The mirror reflection was simulated by compositing images of the mirror, lamp, and wall. An alpha channel stored transparency data for the lamp so that the background could show through.



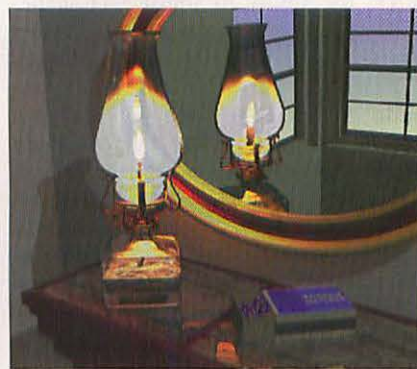
MacTOPAS For the lamp and mirror frame, the artist created a cube and assigned it an environmental reflection map. After rendering, the cube was deleted and the map was saved to disk. The map was then used on the mirror frame and lamp. The gold and glass attributes on the lamp come with MacTOPAS.



Presenter Professional The image was reworked to use spline-based objects. The mantel uses a procedural texture; the walls and window use images from Form and Function's Wraptures CD. Note the refraction through the globe and reflection off the mirror—the program created these by ray tracing.



Ray Dream Designer The matches and matchbox use texture maps; the mantel, mirror frame, and wallpaper use solid textures. Note the reflection on the mirror—a single light source gradually diminishes to darkness. The mantel is semireflective; the globe is reflective and transparent.



Sculpt 3D and 4D The interior of the globe uses a cylindrical projection soot map; the matchbox label, sky, and burnt matches use parallel projection maps. Built-in textures were used for the mirror, globe holder, outside of the globe, oil, matchbox, and matches. Other textures were custom designed in Adobe Photoshop.



StrataVision 3D The lamp was remodeled with refracting polygons to give realistic refraction through the globe. A flame map on the wick makes the lamp appear lit. A glow map makes the globe brighter around the flame. Textures for the mantel, globe, frame, and wallpaper come with StrataVision.

All programs that offer vertex-level editing let you drag any point on an object to any location in space. Sculpt 3D and 4D are the only programs that let you move several points at once, rotate or resize them, and perform operations such as extrusions on them. With Sculpt 3D and 4D, you can start from a single point in space and build outward in any direction to create virtually any object imaginable. Sculpt 3D and 4D also allow you to stitch the vertices of two objects together. A word of caution to would-be Sculpt 3D and 4D users: if you're not careful when building with these advanced techniques, it's easy to create objects that looked crude and faceted.

Creating a Surface

ONCE YOU'VE BUILT A MODEL, YOU will want to apply colors and textures to it. Depending on the program's rendering capabilities, you can use a variety of textures: marble, wood, glass, stucco, and downright gooey substances. Surface properties—often described by specular, diffuse, ambient, and transparent coefficients—are the bases for creating surfaces that appear to be glass, plastic, and metal. To create surface properties, you basically adjust the shininess and transparency.

Since real-world objects are made of more than just glass and plastic, you will need to create other textures as well. The most common way is to place a PICT or TIFF image file on the surface of an object; this process is called texture mapping. All the products covered here support texture mapping except Form Z and Aldus Super 3D. The shape of the object and the effect you're after both determine how you apply a texture. For instance, you can use cylindrical mapping to wrap labels around 3-D cans, or

spherical mapping to cover a sphere with a map of the earth. Alternatively, you can use cubic mapping to project the same image file onto all six sides of a cube. Flat projection places an image on a single, flat surface.

Some renderers support procedural textures, computer-generated textures that make an object look as though it has been carved from a solid block of the specified material. Procedural textures, most often used to simulate wood and marble, are extremely useful because you control the colors, size, and distortion of the pattern, and the texture wraps around any object you apply it to. Be forewarned, however, that procedural textures look fake and cheesy if they are not carefully constructed.

Textures and Lights

A SPECIAL TEXTURE MAP, A BUMP MAP, lets you create an irregular surface. Bump mapping uses light and dark values of an image to simulate nicks, dents, or bumps. Bump mapping can add dimples to an orange or a golf ball—effects that are difficult and time-consuming to create by straight modeling.

You can also get the effect of nicks, dents, and bumps with procedural surface displacements—computer-generated bumps that any rendering program that offers procedural textures can create. These are great for simulating the random irregularities found in, for example, stucco and concrete surfaces.

Another type of texture map, a reflection map, creates the impression of a reflective surface such as chrome or metal. With reflection maps, the rendering program projects a user-defined image onto an object from all sides, and the object reflects the image. (Reflection maps are often used in Phong-shading pro-

grams, like ElectricImage Animation System and MacTOPAS, since these programs cannot create ray-traced reflections by calculating.) For things like logos that move in space, reflection maps dramatically enhance the effect of light interacting with metallic surfaces.

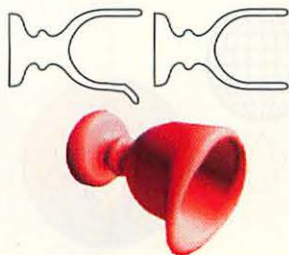
ElectricImage Animation, Sculpt 3D and 4D, and MacTOPAS excel at texture mapping. ElectricImage gives you intricate control when placing a texture over a surface. Sculpt also offers incredible power—you can apply a different texture to every face of a model. ElectricImage Animation, Sculpt 3D and 4D, and Infini-D as well allow you to combine two or more different texture effects on the same surface. Other good texture-mapping programs include StrataVision 3D, Presenter Professional, Ray Dream Designer, and MacroMind Three-D.

After applying textures to a model, you need to light it. Modeling programs offer four basic types of lights: point (which radiates from the center of a source, like lamplight), spot, distant (which creates a continuous band of directional light, like sunlight), and ambient. Almost all programs have ambient light sources, but otherwise, lighting capabilities vary. For example, StrataVision 3D offers all four light types and can generate shadows. MacTOPAS also generates shadows, but only supports ambient and point lights. ElectricImage has all four types of lights but doesn't support shadows (Electric Image says the next version will offer shadows). Sophisticated lighting and shadows can enhance the depth of an image.

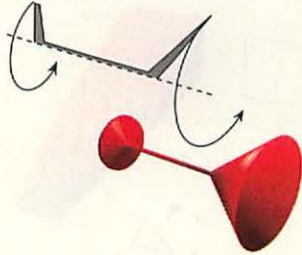
Rendering

ONCE YOU'VE BUILT A MODEL AND APPLIED textures and lights, it's time for the Mac to do some work. The three

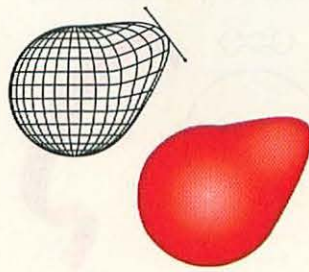
A Visual Guide to Features



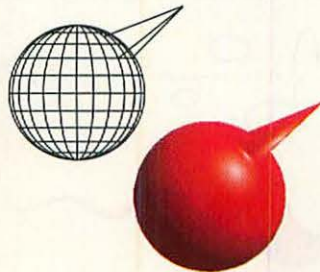
Cross-Sectional Modeling Allows you to apply a cross-sectional, 2-D outline to an outline of the top and sides of an object to create a 3-D shape (see "3-D Programs at a Glance," for products with this feature).



Lathing Allows you to take a 2-D outline and rotates it 360 degrees to create a 3-D shape. Unlike cross-sectional modeling, lathing cannot produce odd shapes (see "3-D Programs at a Glance," for products with this feature).



Spline-Based Modeling Enables you to smoothly adjust the form of a 3-D object via control points. You move the control points much as you would in a draw program (see "3-D Programs at a Glance," for products with this feature).



Vertex-Level Editing Allows you to select and reposition a single point on a 3-D object. Vertex-level editing gives you maximum control over an object's shape (see "3-D Programs at a Glance," for products with this feature).

basic types of rendering most common to professional modeling and animation programs are Phong shading, ray tracing, and RenderMan. StrataVision 3D also includes radiosity (a technique that takes the color and other properties of a light source into consideration).

Phong shading is the fastest professional way to render images. Phong-shading programs are generally capable of generating smooth surfaces, texture-mapped objects, bump maps, shadows, and different types of lights. A few high-quality Phong-shading programs—such as ElectricImage Animation System, MacTOPAS, and MacroMind Three-D—can create fully antialiased images with lights, texture maps, transparency, reflection maps, and more. Unfortunately, none of these Phong shaders can produce procedural bumps or procedural textures. MacTOPAS can simulate ray tracing by generating its own Phong-shaded version of reflections of other elements in the environment.

Ray tracing is the most popular rendering method because it can render objects with realistic reflections and shadows. Ray tracing, however, can be extremely time-consuming, sometimes taking ten hours or longer to render a single full-screen image. With ray tracing, a rendering program tracks each beam of light in a scene and calculates how that light interacts with each visible surface in the scene. If an image contains glass or reflective surfaces, then the ray-tracing program also calculates where the light reflected from that surface goes. The more lights and reflective or transparent surfaces a scene contains, the more work the rendering program has to do and the more time it takes to render the image. Programs that use ray tracing include StrataVision 3D, Sculpt 3D and 4D,

3-D PROGRAMS AT A GLANCE

	Aldus Super 3D	ElectricImage Animation System	Form Z	Infini-D
Company	Silicon Beach Software	Electric Image	autodesys	Specular International
Price	\$495	\$7495	\$999	\$895
MODELING				
Cross-sectional	●	○	●	●
Lathing/sweep surfaces	●/●	○/○	●/●	●/○
Spline curves/vertex-level editing	○/●	○/○	●/●	○/○
Hierarchical linking/3-D text	●/○	●/○	●/○	●/●
Files in DXF format (imports/exports)	○/○	●/●	●/●	●/○
Exports MacRenderMan RIB files	●	○	○	○
RENDERING				
Ray tracing/Phong shading	○/○	○/●	○/○	●/●
Spotlights/point lights	●/○	●/●	○/●	●/●
Distant lights/fog	●/○	●/●	○/○	○/○
Cubic mapping/bump mapping	○/○	●/●	○/○	●/●
Procedural textures	○	○	○	●
Procedural surface displacement	○	○	○	●
Alpha-channel masks	○	●	○	○
ANIMATION				
Key frame/hierarchical	●/●	●/●	○/○	●/●
Metamorphosis/spline paths	●/○	○/●	○/○	●/●
Can animate lights/camera	○/●	●/●	○/○	●/●
PICS file mapping	●	●	○	●
Can animate procedural textures	○	○	○	●

● = yes; ○ = no. ¹ Sculpt 4D (\$3500) includes all of the features that Sculpt 3D does, plus animation capabilities. ² SwivelMan

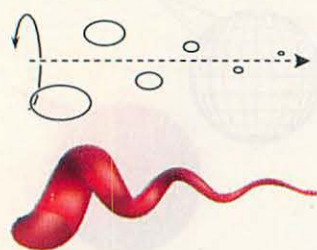
Presenter Professional, Infini-D, and Ray Dream Designer.

Pixar's MacRenderMan uses procedural (or algorithm-based) shading to create practically every element of an image—lights, textures, atmospheric conditions such as fog, and surface displacements. Pixar is trying to position MacRenderMan as the universal 3-D rendering language for all computer platforms, but due to the lack of programs that can fully control all of its features and capabilities, MacRenderMan has received only limited acceptance. Mac-

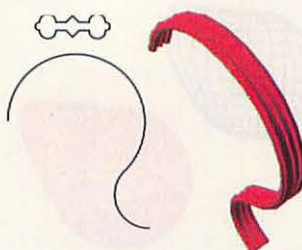
RenderMan's quality is high; Pixar has used the algorithm to produce several award-winning animations over the past few years.

Most modelers can export either RIB (RenderMan Interface Bytestream, RenderMan's proprietary file format) or AutoCAD DXF files. While only MacRenderMan imports the RIB file format, most rendering programs import DXF files. For programs that don't export RIB or DXF files, you may be able to export files with Kandu Software Corporation's CadMover, a 3-D file-conversion utility.

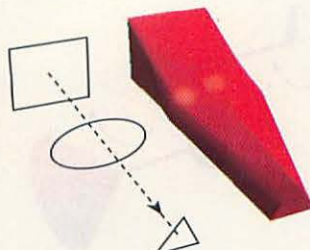
A Visual Guide to Features (continued)



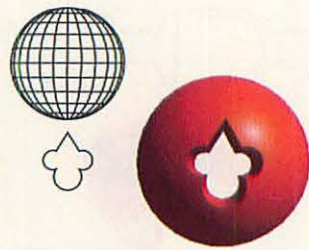
Sweep Surfaces Allows you to sweep a 2-D outline in a circular fashion around a center point while gradually resizing, rotating, or moving the outline in 3-D space (see "3-D Programs at a Glance," for products with this feature).



Extrude along a Path Allows you to extrude a 2-D outline along a curved path to create complex shapes (Form Z, MacTOPAS, Presenter Professional, Ray Dream Designer, Sculpt 3D and 4D).



Loft A form of extruding along a path that allows you to combine several 2-D shapes as cross sections to create a complex 3-D object such as a car chassis (MacTOPAS, Presenter Professional, Sculpt 3D and 4D).



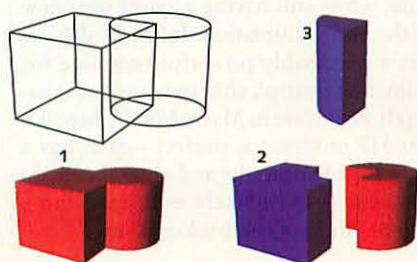
Drill Enables you to take a 2-D outline and use it to drill a hole through a 3-D object. The object then contains an actual hole, not just the facade of one (Form Z, MacTOPAS).

MacRenderMan and Showplace	MacroMind Three-D	MacTOPAS	Presenter Professional	Ray Dream Designer	Sculpt 3D ¹	StrataVision 3D	Swivel 3D Pro
Pixar	MacroMind/ Paracom	AT&T Graphics Software Labs	VIDI	Ray Dream	Byte by Byte Corporation	Strata	MacroMind/Paracom
\$995	\$1495	\$7495	\$3600	\$895	\$2500	\$995	\$695
○	○	●	●	●	●	●	●
○/○	○/○	●/●	●/●	●/○	●/●	●/●	●/○
○/○	○/○	●/●	●/●	●/●	●/●	○/○	○/●
○/●	○/○	●/●	●/●	●/○	●/●	●/●	●/●
○/○	○/○	●/●	●/●	●/●	●/●	●/●	●/●
●	○	●	●	○	○	○	●
○/●	○/●	○/●	●/●	●/●	●/●	●/●	○/●
●/●	●/●	○/●	●/●	●/●	○/●	●/●	○/○
●/●	●/●	○/●	●/●	●/○	●/○	●/●	●/○
●/●	●/●	●/○	●/●	●/●	●/●	●/●	○/○ ²
●	○	○	●	●	●	●	○ ²
●	○	○	○	○	●	○	○ ²
●	●	○	●	●	●	○	○ ²
○/○	●/●	●/●	●/●	○/○	○ ¹ /○ ¹	●/●	●/●
○/○	●/●	●/○	○/●	○/○	○ ¹ /○ ¹	●/●	○/○
○/○	●/●	●/●	●/●	○/○	○ ¹ /○ ¹	●/●	○/○
○	●	○	○	○	○ ¹	●	○
○	○	○	○	○	○ ¹	●	○

(\$895) contains these features. SwivelMan is a bundle of two programs: Swivel 3D Pro and Pixar's MacRenderMan.

Time Concerns

RENDERING CAN TAKE A VERY LONG time. Time ranges of half an hour to four hours are not at all uncommon for a full-screen image (640 by 480). Images that will be printed are often rendered at much higher resolutions (say, 4000 by 4000) and can take a couple of days to create. Some companies, such as Strata, are working to enable their products to perform distributed processing—that is, dividing the rendering tasks among several maps in order to speed the total rendering time.



Boolean Operations Let you use one shape to modify another. These operations provide three ways to create images—join two shapes, take the area where two shapes overlap, or take the area where two shapes

ElectricImage Animation System is the only program that doesn't require such long rendering times. It is 10 to 20 times faster than competitors such as Infini-D, Sculpt 3D and 4D, and MacroMind Three-D. Most images that would take several hours to render in another program take a few minutes in ElectricImage Animation, making it a viable animation program. To equal ElectricImage Animation in speed, other programs need to use a render acceleration board, such as Yarc Systems' NuSprint board (8MB \$3700, 16MB \$4700). The Yarc board currently works only with Presenter Professional.

Rendering programs offer a wide range of image quality. Swivel 3D Pro, Form Z, and Aldus Super 3D can't render photo-realistic textures—these programs should be considered for modeling only. Ray Dream Designer and Infini-D are both adequate ray-tracing programs, although finished images tend to have jagged edges that need to be processed through an antialiasing utility like Ray Dream's JAG (\$99.95). StrataVision 3D is one of the best ray-tracing programs I've seen. It produces incredibly crisp images and offers a wide variety of texture and lighting capabilities. Because StrataVision 3D's modeling capabilities are limited, however, the program is best used as an entry-level program for creating sophisticated still images.

Sculpt 3D and 4D are very capable renderers; they can apply a different color or texture to each face of an object. Unfortunately, Sculpt 3D and 4D's finished images occasionally contain jagged edges. Similarly, MacTOPAS is one of the better renderers. It is fast, has great texture-mapping capabilities, and offers sophisticated control over shadows. It has no spotlights. Presenter Professional has a pretty good renderer, with support for good-quality Phong shading and ray tracing. Unfortunately, the ray tracer is quite slow, so you should either stick with the program's smooth Phong renderer or purchase a Yarc accelerator board to ease the ray-tracing render times.

ElectricImage Animation System, MacroMind Three-D, and MacRenderMan are dedicated rendering programs designed solely to render models created by other programs. As renderers, all are excellent. ElectricImage Animation has phenomenal texture-mapping control, allowing up to three channels of image data per object (the more channels a program allows, the more control you have over the appearance of a surface). (Sculpt and Infini-D also allow you to mix surface qualities, a process referred to as compound surfaces.) ElectricImage also has nice spotlight control and fog effects. However, the program can't create shadows, so you may lose a little depth or realism. Worse, at \$7495, ElectricImage

MW

EDITORS' CHOICE

Entry-Level Still Image

Ray Dream Designer For an entry-level program Ray Dream Designer offers the richest assortment of modeling features, with the ability to create spline-based shapes. Ray Dream also comes with a nice variety of built-in textures. **Company:** Ray Dream. **List price:** \$2500.

StrataVision 3D Another good choice for entry-level still-image creation is StrataVision 3D. Although somewhat limited as a modeler, StrataVision 3D offers the highest-quality ray tracing. **Company:** Strata. **List price:** \$995.

Entry-Level Animation

Infini-D For low-end animation Infini-D offers incredible power, with the ability to animate metamorphosis changes to both textures and models. Unfortunately, Infini-D's modeler is weak. **Company:** Specular International. **List price:** \$895.

High-End Still Image

Sculpt 3D and 4D Sculpt is the most powerful modeling program on the Mac, bar none. Unfortunately, the user interface is tough to learn. Sculpt is also a capable renderer—and in the case of Sculpt 4D, animator—although other programs can perform these tasks faster and more easily. **Company:** Byte by Byte Corporation. **List price:** Sculpt 3D \$2500; Sculpt 4D \$3500.

MacTOPAS MacTOPAS is great for still-image work. Its modeler has spline-based modeling and vertex-level editing, both of which are accessible through a wide array of tools. MacTOPAS's renderer is very good and can create high-resolution files for print, as well as video. **Company:** AT&T Graphics Software Labs. **List price:** \$7495.

Presenter Professional Presenter Professional is a very good spline-based modeler. Although ultimately it doesn't offer the same amount of control as Sculpt or MacTOPAS, Presenter has a full set of modeling tools. Presenter offers the most robust support of MacRenderMan, making the two products a great companion set. **Company:** VIDI. **List price:** \$3600.

High-End Animation

ElectricImage Animation System ElectricImage is the fastest professional-quality rendering program, and its texture-mapping capabilities are extremely sophisticated. Unfortunately, it is extremely limited when trying to animate complex motions, which is certainly a consideration when spending \$7500. **Company:** Electric Image. **List price:** \$7495.

MacroMind Three-D Three-D is the most powerful animation tool. Three-D's score feature gives you total control over animations by allowing you to adjust any parameter of any object at any point in time. Best of all, the program's intuitive approach and sensible interface allow you to work quickly when composing complex animations. **Company:** MacroMind/Paracomp. **List price:** \$1495.

Animation is dreadfully expensive, uses a hardware copy-protection device, and is limited by simplistic animation controls, its only ideal use being that of a flying logo program. (In fact, it has less control than programs that cost a fraction [1/5] of the \$7500 the company charges.)

MacroMind Three-D has great lighting and good texturing control. Three-D's spotlights, which can create shadows, are incredibly powerful, especially when used in animations. Pixar's Showplace, a program that works as a front end to MacRenderMan, offers a friendly point-and-click approach to composing a scene. Showplace comes with a starter set of 3-D clip art and a library of textures. You can also purchase VG Shaders + VG Looks from the Valis Group. VG Shaders is a set of 3-D surface textures such as aluminum or tortoiseshell that you can apply to any MacRenderMan-compatible model. Showplace does not support animation, however.

Animating Images

MOST PROGRAMS OFFER KEY-FRAME animation. You position objects at important, or key, positions and the computer generates all the positions in between. Hierarchical animation is an advanced form of key-frame animation in which you animate the moving parts of a model in relationship to one another. For instance, in a model of a human being, you can link objects so that moving the hip triggers the arms and legs to swing in a walking motion. All programs, however, bog down when you attempt a highly complex animation.

Of the entry-level programs, Swivel 3D Pro is the best for quick prototyping, since it lets you precisely and easily control hierarchical animation. With Swivel, you can constrain the rotation and pivoting of various parts of a hierarchy.



Swivel 3D and MacroMind Three-D The models were created in Swivel 3D and rendered in MacroMind Three-D. Swivel 3D allows you to quickly build objects like the building and the robot, with easy-to-use, powerful linking tools. MacroMind Three-D offers texture mapping (building, billboard, robot eye), bump mapping (ground), reflection mapping (robot body), and spotlights (highlight on billboard).

Professional-level programs that offer intermediate-level animation control include MacTOPAS, ElectricImage Animation, and Presenter Professional. A notable animation feature, offered by MacroMind Three-D, Infini-D, StrataVision 3D, ElectricImage, Presenter Professional, and Sculpt 4D is object metamorphosis—the ability to animate objects along a spline path to create very smooth movement.

Another powerful feature offered by MacroMind Three-D, Infini-D, MacTOPAS, Aldus Super 3D, StrataVision 3D, and Sculpt 4D is object metamorphosis—the ability to animate the shape of an object changing over time (showing, for instance, a flower bud opening). Infini-D's metamorphosis is extremely powerful, allowing you to animate from one block of 3-D text to another. MacroMind Three-D lets you animate between two or more predetermined models—but only if they have the same number of points. Metamorphosis in MacTOPAS involves animating the control points of spline grids and meshes, which can also be quite powerful.

Truly versatile 3-D animation programs let you control a number of objects at the same time. Sculpt 4D and MacroMind Three-D offer the best solutions. Sculpt 4D can animate complex models in sophisticated ways—for instance, animating the vertices that make up a character's mouth in order to create the effect of lip-synching. Sculpt 4D also allows you to bring models in and out of an animation as you need them, thereby using memory efficiently.

MacroMind Three-D, however, offers the most powerful overall animation environment because it gives you easy access to all animation parameters via a MacroMind Director-type score (which lets you plot the movements and timings of objects in an animation). You can easily exert precise control over all parameters of each object at any given point in time, while still having a quick overview of the entire animation. Infini-D also offers a reasonably powerful time line for animation control, although it is not as in-depth as the one in MacroMind Three-D. No 3D program is perfect—each has a long list of strengths and weaknesses. In fact, you'll most likely end up owning two or three of the packages. ■

See *Where to Buy* for contact information.

DAVID POOLE is a consultant, animator, and graphic designer for Zen Over Zero in New York. He has worked as a broadcast TV writer and producer and has been a consultant to ad agencies, video production facilities, and TV broadcasters for Mac graphics and video.

If you think QuarkXPress is powerful, wait till you meet its **XTended** family

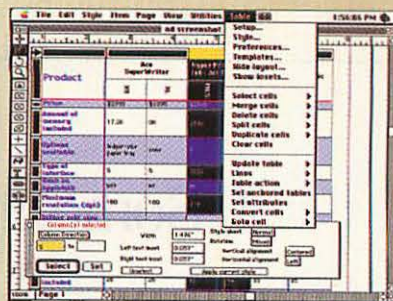
XTensions are add-on programs for QuarkXPress®

These modules expand the features and capabilities of QuarkXPress, the most powerful page layout software available. XTensions let you automate specialized tasks such as database publishing, advertising placement, and the creation of complete press signatures. Because XTensions "nest" inside QuarkXPress, you can customize the program to meet your specific publishing needs.

If an XTension does not exist to meet your need, XChange can put you in touch with freelance programmers to create a custom XTension.

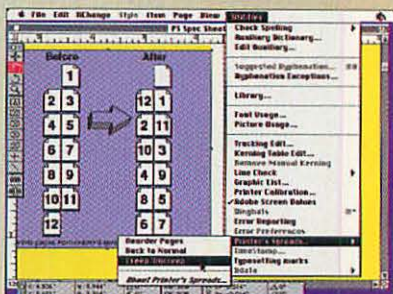
XChange offers more than just XTensions.

Call us to order typefaces from Adobe™ and Bitstream™, CD-ROM libraries of high-resolution photo scans, and much more. Keep up to date on the latest XChange products and XTensions by joining the XTension of the Month Club. Call our toll-free number for the latest, greatest, and up-to-date list of XTensions.



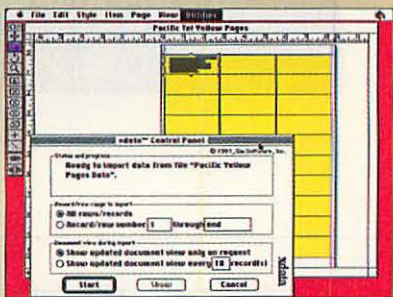
TableWorks® 2.0 lets you build tables interactively in QuarkXPress using standard grid layouts or custom cell patterns to achieve the exact table and text style you want. You can import data into your tables from other applications or use information already in QuarkXPress.

\$299.00



Printer Spreads 1.0 helps printers and desktop publishers compose saddle-stitched publications. It installs easily and allows you to quickly convert XPress documents from reader's spread format to printer's spread format. In addition, this XTension can optionally move every page element in user-definable increments to accommodate printer creep.

\$179.00



Xdata® 2.0 lets you import data from a database or spreadsheet program into formatted QuarkXPress 3.1 documents. You can automatically assign the style for each field as the file is imported into QuarkXPress. It makes creating directories, spec sheets, and other data-intensive documents a breeze!

\$299.00

**CALL OR FAX YOUR ORDER OR
REQUEST FOR MORE INFORMATION.**

**TOLL-FREE (800) 788-7557 OR
(407) 321-8173
FAX (407) 321-4724**

**XChange
535 South Sundance Dr.
Lake Mary, FL 32746**

XChange is not affiliated with Quark, Inc.

Bookends/TOC Bundle \$229.90

Powerful indexing and table of contents building.

Resize XT \$40.00

Gives you ability to size text by simply resizing the box.

Thesaurus Rex \$59.00

A 220,000 word online thesaurus w/sequential lookups.

ColorChange \$80.00

Now you can search and replace colors in a document.

Copy Specs \$30.00

Utility for copying and pasting character-based attributes.

XMacro \$299.00

Use/create your own ASCII formatting tags. Automate formatting of data imported from other systems.

XSize \$179.00

Boosts productivity in sizing, scaling, and positioning graphics.

Xtend InsertSpace \$49.00

Precise positioning and automatic setting of tabs.

XTend SetSkew \$49.00

Create and edit skewed text directly in QuarkXPress.

XStyle \$79.95

Gives you stylesheet editing and application palettes and more.

Electronic Border Tape 1 \$99.00

101 decorative frames for flyers, brochures, newsletters, and more.

EBT Too \$99.00

A second collection of designer borders for all occasions.

Default Settings \$20.00

Customize/enhance QuarkXPress the way you like it.

QSpool \$495.00

Adds high-speed spooling and printing capabilities to QuarkXPress.

QXedit \$149.00

Adds a lightning-fast "story editor" to QuarkXPress.

SpectreScanQX \$295.00

Use several desktop and high-end scanners to scan and color correct from inside QuarkXPress.

SpectreSepsQX \$495.00

Now you can separate TIFF and PICT files on-the-fly from within QuarkXPress.

XTension Manager \$69.95

Control which XTensions load without moving them in and out of the QuarkXPress folder.

InPosition \$1750.00

Create complex press signatures from any QuarkXPress document.

Pinpoint XT \$79.95

Helps track and eliminate PostScript® printing errors.

Trapping Interactive Tutorial \$19.95

Learn what trapping is and how to do it.

Dashes XTension \$200.00

High quality multilingual hyphenation utility.

Spellbound \$200.00

Fast feature-rich multilingual spell checking utility.

Color Manager \$149.00

Control and manipulate color usage in documents.

Dingbats. \$50.00

Versatile palette helps you select and insert symbols from your different "symbol" typefaces.

Laser Stock Photos \$495.00

More than 40 drum-scanned, high-res, full-color, royalty-free stock photos on a CD.

DataLock XTension \$99.00

Prevents unauthorized changes to the QuarkXPress Data file.

The Puzzler \$495.00

Tools to automate creation of crossword puzzles.

MS Word or WP Dos Import Filter \$295.00

Import text files directly from DOS. Supports extended character sets and fonts.

Wang WP/PC Import Filter \$295.00

Import Wang files. Supports European character set.

Overset \$69.00

Saves editing time by letting you see beyond the overset.

CopyBridge \$1500.00

Bidirectional import/export for QuarkXPress and XyWrite.

CopyFlow \$395.00

Automate document building with batch import/export of text and/or graphics files.



Circle 145 on reader service card

Some things are clearly built for speed.



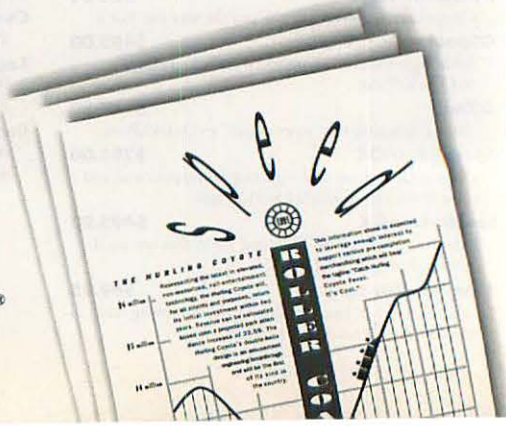
Hang on! At 17 pages per minute, the new HP LaserJet IIISi printer for the Macintosh runs full tilt. With a high-speed engine, more standard memory (5MB, expandable up to 17MB), and a RISC-based formatter, this printer can have your work finished faster than you can shout "the HP LaserJet IIISi for the Macintosh."

Designed specifically for high-volume printing, this machine comes with two 500-sheet in-

put trays, a 500-sheet output capacity, and a 50,000-page-per-month duty cycle. In addition to quick turnarounds, you gain paper-handling versatility with job offset and a tray-full sensor. And for even greater flexibility, you have the option of adding two-sided printing and an envelope feeder.

What's more, our printer has true Adobe®

PostScript® built in. Which means this machine whips through PostScript printing, while others may keep you



Others aren't so obvious. Introducing the LaserJet IIISi for the Macintosh.



Works with LocalTalk and EtherTalk.

waiting. So whether your workgroups are networked by LocalTalk, EtherTalk, or sharing files between both, simply plug in and they're ready to roll.

Perhaps the best news of all is the price. The HP LaserJet IIISi for the Macintosh is only \$6,995.* So if you're interested in affordable, express printing with the service and reliability you've come to expect

from Hewlett-Packard, call **1-800-752-0900, Ext. 2607** for the name of your nearest authorized HP dealer.† And discover the printer that will take your breath away.

LaserJet Printers
When it's important to you.



**HEWLETT
PACKARD**

*Suggested U.S. list price. Adobe and PostScript are registered trademarks of Adobe Systems, Inc. in the United States and other countries. †In Canada call 1-800-387-3867, Ext. 2607 © 1991 Hewlett-Packard Company PE12122

Reviews

IN THIS ISSUE: OneScanner, Macintosh PowerBook 170, MarketPlace Business, Painter, LaserScript LX, Instant Update, Verbum Interactive, Hard Disk Toolkit, Help, and more

Flatbed Gray-Scale Scanner

OneScanner

PROS: Excellent software makes scanning easier for novices; automatic tone corrections; software automatically scans halftoned images without moirés. **CONS:** Slow scanning speed. **COMPANY:** Apple Computer (408/996-1010).

REQUIRES: Hard drive; 1MB of RAM with System 6.0.7, 2MB of RAM with System 7. Recommended: Additional RAM. **LIST PRICE:** \$1299; Ofoto software available separately for Apple Scanner owners from Light-Source (800/231-7226). \$195.



ANY REVIEW OF APPLE'S NEW OneScanner is bound to quickly become a review of Ofoto, the scanning software that's bundled with the device. That's because the scanner itself is a run-of-the-mill 8-bit, 300-dots-per-inch flatbed, while the software is unique.

Apple hopes Ofoto will do for scanning what automatic cameras did for 35mm photography: take it out of the hands of professionals and make it part of everyday life. The program's easy-to-use controls might do just that. Ofoto is a real boon for anyone who wants to scan images without working too much, and who then outputs scans on laser printers and other low-resolution devices. The software has automated functions that enable novices to get good results, as well as some unique features that even old scanning hands will appreciate.

Canny Scanning

OFOTO WORKS IN A COMPLETELY DIFFERENT way from other Mac scanning programs. To use it, you don't have to know anything about bit depth, how to

adjust tonal values, or how to solve that perpetual scanning conundrum—what resolution to set for a given halftone line screen, output device, and scaling factor. Instead, you simply pick an output device from a menu and let the program handle the rest, with Ofoto plugging in optimal resolution values as well as a predefined tone-correction curve. During prescan, Ofoto senses whether the artwork being scanned is line art or a photograph, and sets bit depth accordingly. Naturally, you can switch to manual control and set up your own scan parameters.

You can also add new printers to the output-device list and adapt the printer characterizations Ofoto supplies to calibrate for your own particular printer. The calibration process is straightforward. You print a software-generated gray chart, scan the printout, make any changes you want to the resolution and bit-depth settings, and then name the resulting calibration file.

Ofoto includes a number of other features that make scanning easier, such as a magnifier that lets you zoom in on prescans to select the exact image area

you want. Ofoto has an excellent tool for free and numerical rotation. It can sharpen, resize, flip, and crop scans after you've made them. The program can save a compressed TIFF file or print a random dither pattern that maximizes image quality on low-resolution printers. And it has a superb scaling tool that works in tandem with the program's mechanism for setting scan resolution. You simply enter the height, the width, or the scaling factor you want—or any combination of the three—and the program calculates the scan resolution required to deliver the best results.

Anyone who has watched a demonstration of Ofoto will likely have seen the program presented in terms of one-touch, fully automated scanning. Some of the features that make this possible are the software's ability to automatically find the edges of a page, crop to them, and rotate the page to straighten it if necessary. While these features are clever, they are not actually that useful considering the delay they entail. Autocropping is unreliable, and even when it works it doesn't do what you really want it to, which is to crop

to the edge of the image, not the edge of the page. As for autorotation, putting the artwork on the scanner straight to begin with is quicker. Mercifully, Ofoto allows you to turn off these functions.

Means behind the Scenes

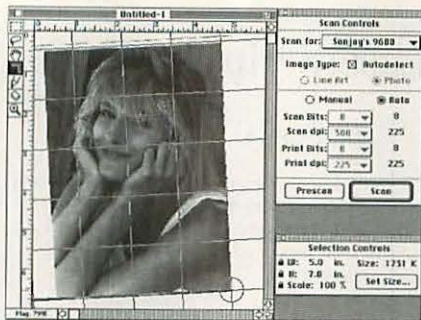
TWO OF OFOTO'S MOST IMPORTANT facilities are its high-quality *interpolation algorithms* (selected as Faster and Better Quality), which work behind the scenes to accomplish many of the program's operations. These routines come into play whenever Ofoto has to take an image apart and reconstitute it at a different size, resolution, or orientation. They're what enable the program to rotate images, for example, or to simulate scans that have a higher resolution than the scanner's maximum sampling rate (this works particularly well with line art, which comes out looking very smooth).

One of the most unusual things about Ofoto is that it uses high-quality interpolation on virtually every scan it makes. No matter what your desired scan resolution, Ofoto always scans using the OneScanner's maximum resolution of 300 dpi. The software then processes the data to either fabricate a higher resolution or, more typically, sift the scan down to a reasonable size. This approach has its pros and cons.

The biggest plus is that interpolation automatically prevents moirés caused by scanning previously halftoned material.



Tone Correction Laser-printouts before (top) and after (bottom) calibrating for the printer.



Finishing the Interface Ofoto's rotation tool throws a grid to help you align an image to 90 degrees. At right, the scan controls are set to the defaults for an Agfa 9600 imagesetter. The selection controls at the bottom ensure that the final selection will be 5 by 7 inches, with no enlargement.

Filtering down from a higher resolution also produces better quality than the method most scanners use, which simply throws away unneeded samples. The process averages out scanner noise, which can cause a speckled, uneven appearance in what should be flat areas of a picture. It also yields somewhat smoother edges and better detail.

The disadvantage is that Ofoto's processing makes the OneScanner much slower than most gray-scale units—about six times slower in Better Quality mode at high resolutions. Of course, raw scanning speed isn't everything. If you look at the time it takes to set up a scan and tone-correct it to your liking, Ofoto is undoubtedly more efficient in many situations than much faster devices. But it's too bad the software makers didn't provide a quicker, even if inferior, scanning method.

A Good Choice (For Now)

OF COURSE, THE ONESCANNER CAN'T replace skill when it comes to making top-quality halftones. One reason for this is that all images are different, and tonal corrections based on the output device rather than on the image being scanned can only do so much. In my tests, Ofoto's autocorrected scans tend to match the original closely in the midtones, but lack punch because they contain no true blacks or whites. Experienced users will be disappointed to find that the program offers no facilities for selecting the highlight or shadow points of an image, or for adjusting the tone-correction (gamma) curve directly. Anyone who wants optimal results and creative control will still need a program like Photoshop or Enhance.

That's not to say that automatic tone correction isn't useful. It might not provide perfect results for artists or for publishers who want to produce final, imageset film at high resolutions. But for most laser-printed applications—real es-

tate listings, position stats, parts catalogs—Ofoto's autocorrections are good enough and can save you from the time-consuming task of manual correction.

It would be nice if Apple would someday release a device that pushes scanning technology to a higher level, instead of just to a broader audience. By present standards, however, the OneScanner and Ofoto make a solid package. The hardware provides quality as good as or better than that offered by the competition; the software adds considerable value, especially for novice users; and Apple's pricing is aggressive. The OneScanner also comes with HyperScan 2.0, a big plus for HyperCard users. Prospective buyers might want to consider that, for an additional \$300 to \$400, they can get a decent color scanner—with a copy of Photoshop thrown in. But if you decide to go with a gray-scale scanner, the OneScanner is the one.

—JOE MATAZZONI

Laser Printer

LaserScript LX

PROS: Automatic emulation switching; good-quality resident fonts; easy assembly; helpful LCD displays; good performance for the price. **CONS:** Slow; heavy; graceless downloaded fonts; expensive supply-replacement costs. **COMPANY:** Abaton (510/683-2226). **LIST PRICE:** \$1995.

A BATON'S LASERSCRIPT LX IS the new version of the original LaserScript, which received a middling reception due to its slow speed and limited capabilities (see "Personal Page Printers Arrive," *Macworld*, May 1991). The LX is a significantly better printer. Using a National Semiconductor processor running at 25MHz, instead of only 15MHz in the old model, the 300-dots-per-inch, 6-pages-per-minute LaserScript LX is much faster.

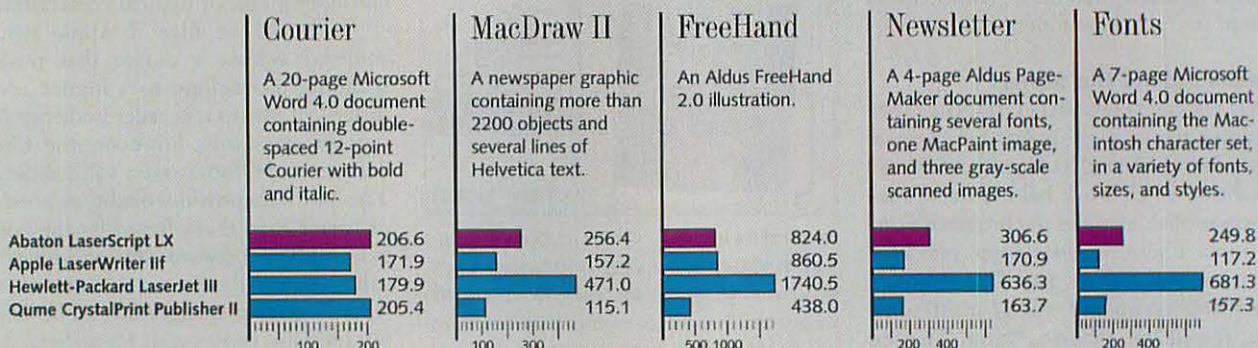
Not only is the LX's performance better than the old LaserScript's, but its performance would have placed the LX with the top of the pack reviewed in *Macworld's* May feature. Compared with the high-end printers evaluated in the December 1991 feature "High-Performance Printing," the LX is slower in the same tests than most of the field. It did edge out the Brother HL-8PS (listed at \$4495), and was clearly faster than the Hewlett-Packard LaserJet III (\$3395). Two high-performance printers are faster than the LX: the Epson EPL-7500 is 80 percent faster; and the Qume CrystalPrint Express is 67 percent faster.

continues



How Fast Is the LaserScript LX?

Times are in seconds.



Despite Abaton's claims that the LaserScript LX outperforms the LaserWriter IINTX, in comparison tests, the LaserWriter IIf (the IINTX's successor) was considerably faster and had better-quality print and graphics. The Abaton, using the Microsoft Bauer PostScript interpreter, produced heavier and less graceful versions of the typefaces tested (Optima, New Baskerville, and Nofret). The LX's typefaces will satisfy most users, but not type connoisseurs.

The LaserScript LX has four active printer ports with automatic switching, and it supports both the Macintosh and PCs on the same network.

When you turn on the printer, the LCD window on the front panel of the printer displays the tests the LX is running before it's ready. When the printer is ready, four fields tell you the current emulation: the size and weight of the paper setting; whether the printer is online, offline, or malfunctioning; and which port is active during transmission. The LCD window also guides you through diagnostic tests.

The LaserScript LX weighs 35.3 pounds and is 16.1 inches wide, 8.3 inches high, and 15.4 inches long (the detachable loading tray adds 8 inches to its length). It has 2.5MB of memory that can be expanded to 4.5MB with optional font cartridge support.

The LaserScript LX is easily assembled. The separate toner cartridge and drum slip easily into a tray that slides into the printer. You will need to buy AppleTalk cables, which do not come with the printer.

The LX's toner cartridge needs to be replaced after 1500 pages of printing, although the toner cartridge that comes with the printer lasts for only 750 pages. The drum unit should last for 10,000 pages. Replacement costs average about 4 cents per page.

The printer's warranty is for one

year on all parts, 60 days on labor (parts replacement), and 90 days for on-site service (maintenance). The technical support at Abaton is a toll-free call to polite, helpful people.

The LaserScript LX is reasonably fast, easy to use, and inexpensive. For less than \$2000, you get good 300-dpi print quality and automatic switching between Macs and PCs. Still, Apple's new LaserWriters IIf (\$3999) and IIfg (\$4999), as well as printers from QMS and other manufacturers, have new image-enhancement technology that smooths lines and sharpens type, and are faster. But if you don't print a lot of graphics or need all that speed, spend the money you save on a vacation.—STEVEN HANKS

Notebook Computer

Macintosh PowerBook 170

PROS: Macintosh IIci equivalent; highly readable display; good battery management. **CONS:** Awkward keyboard and trackball; difficult to add hardware upgrades. **COMPANY:** Apple Computer (408/996-1010). **LIST PRICE:** With 4MB of RAM and 40MB hard drive \$4599.

MACINTOSH USERS HAVE been longing for their version of portable computing. The Macintosh Portable by no stretch of the imagination fulfilled this desire; if anything, it tweaked the noses of those seeking portable Mac computing. Apple's new PowerBooks redress that grievance.

The Macintosh PowerBook 170 is the top of the PowerBook line, thanks to a 25MHz CPU, a math coprocessor, a built-in modem, and 4MB of RAM. As a computer, it is equivalent to a Mac IIci.

But how good a *notebook* is it? It's a powerful computer in an attractive pack-

age, but does it really work as a portable? The answer is yes, although it could be better. While the PowerBooks are a giant step forward for Apple, in the greater notebook universe the 170 is merely a solid but typical machine. The PowerBooks do not represent the kind of pioneering technology and vision that the original Macintosh did. DOS notebook users can easily show you the same kinds of features—low weight, good screen display, high processor power, and fast hard drives—on machines available to them for years. And DOS notebooks avoid some of the flaws of the PowerBook: small keys, awkwardly placed trackball, and barriers to adding hardware options.

Taking It with You

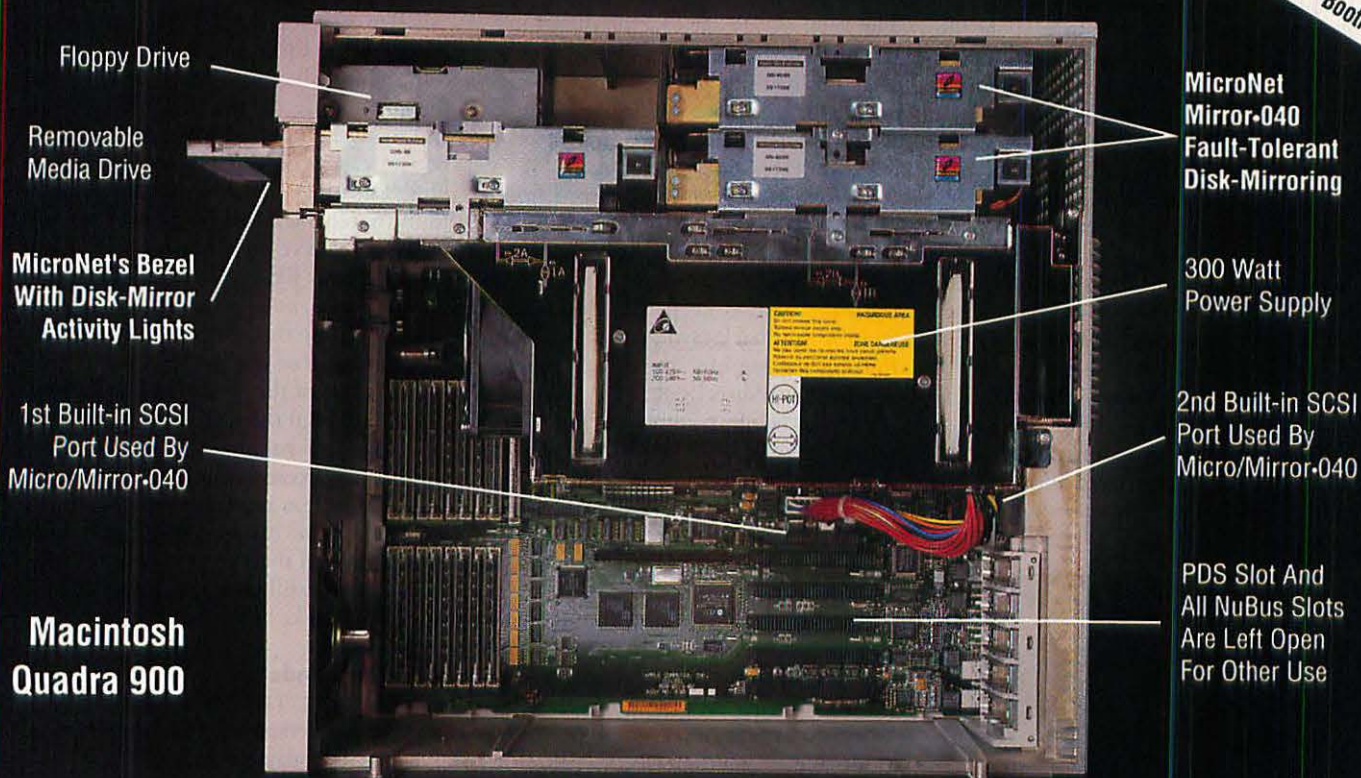
REGARDLESS OF THE MACHINES' flaws, Macintosh users will buy PowerBooks, since the advantage of having a real Mac portable outweighs any inconveniences. To see what it is like to use the 170 as a portable, I used it on my couch, on my dinner table, and at my home office's desk. I also used it on the local subway system and in someone else's cubicle at the office. In short, I tried it out as a employee working sometimes at home, while commuting, and while at someone else's office.

At home, the 170 did best on my desk, since the keyboard height was close to where I prefer it. My dinner table is higher, which meant I had to hold my arms higher than I like to get over the palm rest at the front of the PowerBook. While any keyboard on that table would be higher, the palm rest adds a noticeable barrier that other notebook designs don't, including the Mac-compatible Outbound Notebook System 2030. Fortunately, I could use the leg lifts at the back of the PowerBook to change the keyboard's angle. Obviously, different

continues

Disk Mirror•040!

See Breakthrough Sustained Transfers of
7.0 MB/sec at MacWorld - Booth #1031



Internal Disk Mirroring For The Macintosh Quadra 900. If One Drive Fails - The Other Takes Over With No Down Time!

Mirror-040! The first internal, fault-tolerant disk mirroring system that leaves all NuBus slots open. The Mirror-040 is an effortless, transparent method of preventing data loss, especially for mission-critical applications.

The Mirror-040 system transfers data through both internal SCSI-2 ports of the Quadra 900. Data is stored, with a perfectly mirrored copy, to a matched pair of high performance hard disk drives.

Mirror-040's data protection is the best in the business. With automatic real-time backups, there's no loss of data. If a drive fails, the user is alerted and

the system continues functioning automatically. Mirror-040 systems range in capacity from 312 to 1,020 MBytes. Each system ships complete with special utility software, and a front-mounted bezel with disk-mirroring activity lights.

So why worry? You can internally install over 1,000 MBytes of fault-tolerant storage in the Macintosh Quadra 900. You'll have one of the fastest, safest file servers on the market.

No other company can guard your valuable data like MicroNet. Call our sales department today for details and a reseller near you. 1-714-837-6033.



MicroNet Technology, Inc.

20 MASON • IRVINE, CA 92718 • TEL: (714) 837-6033 • FAX: (714) 837-1164
AppleLink: MICRONET.SLS • Compuserve: 76004,1611

Micro/Mirror-040 is a trademark of MicroNet Technology, Inc. All other trademarks are the property of their respective owners.

Circle 113 on reader service card

people are built differently, so what is uncomfortable for one person is comfortable for another. But the PowerBook's keyboard and palm-rest design makes it hard to adjust the comfort level.

Wherever I used the 170, I found that its recessed keyboard meant that I pulled the notebook closer so I could comfortably reach the keys. But that meant the screen was uncomfortably close: 14 inches rather than my usual 18 inches with a DOS notebook, where the keyboard comes right to the edge of the case. The 170's beautiful screen, based on active matrix LCD technology, is readable from very near and from far away, from a wide range of angles, and in all sorts of lighting conditions. (Incidentally, I checked the emissions of extremely-low-frequency radiation to see if this closer screen distance should concern me. The answer is that it should

awkward. The keys are slightly closer together than normal, and I found the difference enough to result in mistyping. The keys are also less tactile than I prefer: often I thought I had typed a character but had not pressed down enough for the PowerBook to notice, resulting in many misspellings. A spelling checker has extra value on a notebook.

When sitting on my couch, I found the PowerBook to be back-heavy, which brings the front up, pushing against my wrists. (This might be an advantage of the palm rest: it keeps the PowerBook from tilting backward in that position.) Putting the leg lifts up helped counterbalance the PowerBook.

It was while commuting that I had the most trouble with the trackball. Trying to position the cursor to select text on a rocking train was a challenge better suited for video-game enthusiasts. However, no pointing device works well in an unsteady environment.

A word of advice to commuters and airplane riders: although at 6.8 pounds the PowerBook 170 is light for a computer, carrying it from the office two blocks to my car in the crook of my arm was tiring. If you don't carry a briefcase or wear a backpack, get a carrying case when you buy a PowerBook. Several companies sell carrying cases, and they're definitely worthwhile.

As a visitor using someone else's office, I quickly added a full-size keyboard and a mouse. This let me position the display and keyboard independently, as well as type on a familiar keyboard with an easier-to-use layout. (The arrow keys on the PowerBooks are placed in a row at the bottom right, so I had to look each time to see which one I was pressing. I found this difficult because I'm used to the design of an extended keyboard, where the up arrow is on top and the right and left arrow are to the right and left. I'm also a firm believer in Page Down and Page Up, which are lacking in the PowerBooks.)

The PowerBook's battery management is good, warning you of impending power outage several times and extending battery life automatically by dimming the display, which consumes a lot of power. A test developed by Macworld Lab showed that the 170's battery lasts 1 hour and 46 minutes in disk-intensive operations like frequent saves. That's about enough battery life for a commute. If you plan to travel cross-country or overseas, bring an extra battery.

Compared with many notebooks, the battery charges quickly (in about three hours, or in about four or five if you're using the notebook while it's charging—

a great feature lacking in many DOS notebooks). Two batteries should do the trick for most people.

The 170 feels solid. The casing is strong, with little give when I pushed (OK, pounded) on it. Compared with the flimsier plastic on the PowerBook 100 and many DOS notebooks, the polycarbonate casing on the 170 (and 140) is a plus. The hinge that connects the display to the notebook is solid and offers a good grip once you've positioned the display's angle to your liking. I also tend to pick up the open notebook by the display rather than by the base, but it has never become loose or felt precarious.

As a test of the internal components' durability, I put the 170—turned on with an application running that did frequent hard drive access—in my backpack and then hopped on my bicycle for the five-mile ride to the office. About a half hour of shaking did the 170 no harm, and the machine was still chugging away when I got to my desk.

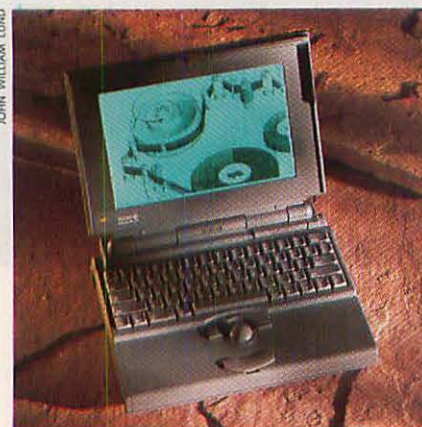
Odds and Ends

AS WITH ALL THE NEW APPLES, THE PowerBooks come with the new System 7.0.1. This update to System 7 takes less room in memory (1MB versus the 2.2MB for System 7.0 on my Mac II), which is great, since 4MB of RAM is standard on the 170. Virtual memory gives you more memory by allocating part of the hard drive as if it were RAM. While virtual memory is slower than real memory, it comes in handy if, for example, you occasionally use a program whose memory requirements exceed the Mac's. This is particularly helpful for the PowerBooks, which require dealer installation of memory upgrades.

Unfortunately, Apple chose not to include a video-out port to connect the PowerBooks to color monitors and overhead projectors—again, standard in DOS notebooks. This omission requires the use of a bulky adapter or installation (yes, by a dealer) of an internal board that plugs into the RAM slots. Several companies have figured out how to get around Apple's omission through clever engineering involving the SCSI or RAM ports, but such tricks shouldn't have been necessary.

Apple says it designed its notebooks under an accelerated development schedule, which may account for these basic design omissions. However, Outbound Systems managed to deliver a Mac notebook that allowed for easy upgrades almost three months before Apple did, although the Outbound notebooks also lack video-out ports.

continues



Macintosh PowerBook 170

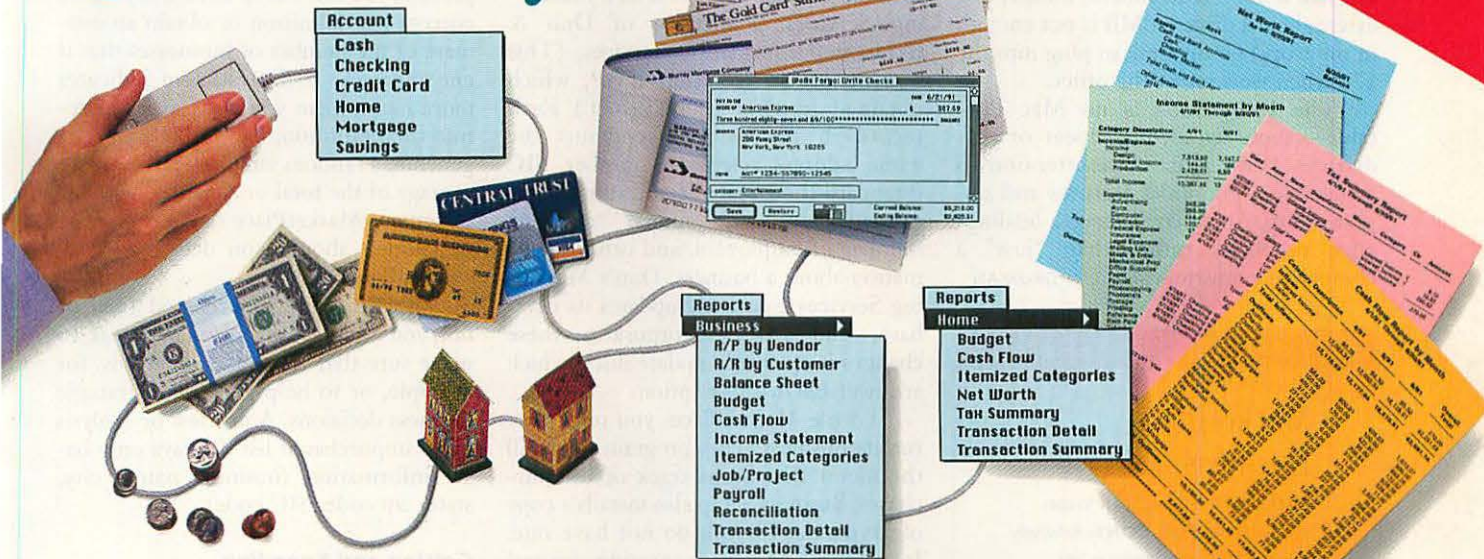
not, since at even only a few inches away, the LCD display's emissions were not measurable against the background radiation in my cubicle.)

Although it is touted as an ergonomic feature, I suspect that the palm rest's real purpose is to make room for the trackball. I don't like the trackball. Part of that dislike is simply that I don't like trackballs of any sort. The other part is that its position below the keyboard means I have to move my hand down, and thus my body back to keep my arm in a comfortable position. The constant moving back and forth, coupled with the jittery feel of manipulating by trackball, soon drove me to a workaround: I plugged a mouse into the ADB port (the trackball still functions when you plug in a mouse). For places where a mouse just won't work, like on a train or plane, I wish there were a clip-on trackball available à la Microsoft's and Logitech's offerings for DOS notebooks.

The 170's keyboard (which is the same as for the other PowerBooks) is also

Organize your finances Quicken easy!

NEW
Quicken 3.0!



The world's #1-selling financial software organizes home and small business finances better than ever – with more than 50 major new features and improvements.

So if you still haven't tried Quicken yet, new version 3.0 is a powerful reason to stop putting it off.

A more complete financial picture.

New Quicken 3.0 does a lot more than manage your checkbook and track expenses. Now it organizes everything from checking and savings accounts to cash, credit cards, assets and liabilities.

You can also track spending, savings and progress toward your goals more precisely than ever – with pre-formatted automatic reports like Cash Flow, Budget, Itemized Expenses, Tax Summary, Net Worth and more. Plus, you can customize your own reports and save them to use again and again.

Easier than ever.

Powerful new Quicken 3.0 is actually simpler than ever to use.

Now paying your bills is as simple as typing into the on-screen check register. New Quicken 3.0 does the rest. It memorizes your regular payments and prints out checks. And now it even lets you pay bills electronically through the CheckFree® payment service.

Meanwhile, it tracks exactly where your money goes – utilities, clothes, charity, etc. – to give you complete, accurate reports and cut tax preparation time to minutes.

Controls small business finances.

You'll be amazed at how much time new Quicken 3.0 saves in your small business. It generates P&L, Balance Sheet, A/R, A/P, Payroll, Job/Project reports and more. No wonder more than half of Quicken owners use it for business.

Satisfaction guaranteed.

We offer free unlimited help by phone. And if you're not completely satisfied, you can return Quicken within 60 days for a full refund – no questions asked.

So you've got nothing to lose, but so much to gain. Try it out!



1990 & 1991 MacWorld
World Class Award



1990 MacUser
Editor's Choice Award



1989 & 1990 MacUser
Highest Rating

1-800-624-8742

Call toll-free 24 hours a day,
7 days a week,
U.S. and Canada.

©Intuit, Inc. 1991



☐ **Yes!** Send me my Quicken 3.0 for the Macintosh for just \$69.95. If I'm not completely satisfied, I can return it for a full refund. Free air shipping within the U.S.

☐ **Yes!** Send me my upgrade version of Quicken 3.0 for the Macintosh for just \$29.95 (includes shipping). I have enclosed the title page from my Quicken Users Manual. **No photocopies, please.** Allow 2-3 weeks for delivery in the U.S., slightly longer in Canada.

CA & MN residents add sales tax.
International shipping extra.

Name _____
Address _____
City _____ State _____ Zip _____
Day Phone _____

☐ Check enclosed (no COD or purchase orders)
☐ Visa ☐ MasterCard ☐ AmEx ☐ Discover
Card# _____
Exp. Date _____
Signature _____

Equipment required: Any Macintosh computer with at least 1 megabyte of RAM, one or more floppy disk drives, or a hard disk, and system 4.1 or later (System 7 compatible). Guaranteed to work with all printers and monitors or your money back. Not copy protected. Free unlimited technical support.

Mail to:
Intuit
P.O. Box 3014
Menlo Park, CA 94026
Or call 1-800-624-8742



Ad Code: MWO2E

A Good Machine, Really

IT MIGHT SOUND AS IF I DON'T LIKE the PowerBook 170. Not true. It's a quantum leap for Apple, and a credible notebook in its own right. None of its flaws are fatal. I would eagerly use a 170 on the road. And I wouldn't mind using its CPU as my primary computer, as long as I had a full-size keyboard, mouse, and external hard drive (40MB is not enough in my work) on my desk to plug into the 170 when working at the office.

The PowerBook is no Mac Portable—Apple avoided a repeat of that debacle. With a bit more attention to adjustable ergonomics features and upgradability, Apple could have a leading-edge notebook rather than “just” a competent performer.—GALEN GRUMAN

Direct-Marketing Database

MarketPlace Business 1.1

PROS: Well designed; easy to use; excellent online help. **CONS:** Relatively complex installation; requires lots of RAM; slow; significant price increase.

COMPANY: MarketPlace Information Corporation (617/225-7855).

REQUIRES: Mac Plus; 4MB of RAM; hard drive; CD ROM drive.

LIST PRICE: With 3000 meter credits \$695; each 5000 additional meter credits \$500; first year's quarterly update discs \$195; annual renewals \$495.

IN THE FALL OF 1990, LOTUS Development Corporation introduced Lotus MarketPlace: Business—a direct-marketing tool containing a comprehensive list of businesses nationwide—and trumpeted a soon-to-be-released companion product, Lotus MarketPlace: Households, which was to make available the names, addresses, and socioeconomic status of millions of people. The still-unfinished Households edition sparked a furious debate over privacy; tens of thousands asked that their names be removed from the Households database.

Surprised and stung by negative publicity and the vehemence of public reaction (see *The Iconoclast*, June 1991), Lotus canceled Lotus MarketPlace: Households and withdrew Lotus MarketPlace: Business (LMP) in early 1991. A few months later, members of the original Lotus MarketPlace development team formed a new company, acquired the rights to LMP, and renamed it MarketPlace Business (MPB). The subsequently rereleased product is an upgraded version that is in most ways identical to the Lotus original.

Data on a Disc

MPB IS COMPOSED OF A CD ROM DATA disc and a HyperCard stack. The disc—sent by courier after you purchase MarketPlace, so that you receive the most-current data—stores information on approximately 7 million businesses, and the stack makes sense of it all. The data on the disc is from Dun's Marketing Services, a division of Dun & Bradstreet Information Services. (This is a major change from LMP, which obtained its data from Trinet.) Each record in the database contains the name, address, telephone number, SIC (Standard Industrial Classification) code, principal officer, annual revenue, number of employees, and other information about a business. Dun's Marketing Services constantly updates its database, and MPB incorporates these changes in quarterly update discs, which are available by subscription.

To use MarketPlace, you must first run its Business Setup program to install the meter that keeps track of list purchases; Business Setup also installs a copy of HyperCard if you do not have one. Installation involves entering several lengthy code numbers, one of which you must get by phone from the company. Fortunately, but for its failure to address System 7, the Getting Started manual is quite clear about the procedure.

Unfortunately, because you can install only one meter, you can only run MarketPlace from one hard drive at a time. And moving the program from one computer to another is not to be undertaken lightly: the procedure requires deinstallation, reinstallation, copying the data and entering another lengthy code number, and another phone call.

Defining Your Audience

MARKETPLACE'S MAIN SCREEN IS EXCEPTIONALLY well designed; it describes the three major steps in purchasing a list and provides access to each of the program's essential functions. The first step in the process, defining the parameters of the list, is represented by six icons. Each icon leads to a separate screen or set of screens in which you can specify the types of businesses that interest you. The Annual Sales and Number of Employees icons open charts of businesses' revenue and employees subdivided by magnitude; the Location and Area Code icons lead to dozens of state and regional maps in which you can specify the desired geographic area; and the Type of Business icon opens a nested series of screens containing lists of SIC codes and their definitions. A sixth icon enables you to specify only those records whose infor-

mation has changed since the previous update (so you can easily update a list) or exclude records.

If you can't find the SIC code or location you're looking for, or want to call up a specific record, special Find commands are available in the appropriate screen. At any point in the list-definition process, you can call up a summary of the current list definition or obtain an estimate of the number of businesses that it encompasses. If the estimate indicates more names than you want, you can refine the definition, or MarketPlace can generate a random sample—either a percentage of the total or a specific number of names. (MarketPlace can also save the remainder, should you decide to purchase it later.)

Whether you've purchased a list or not, you can preview and/or analyze it, to make sure that it meets your needs, for example, or to help you make strategic business decisions. A preview or analysis of an unpurchased list displays only basic information (business name, city, state, zip code, SIC code).

Getting and Spending

WHEN YOU DECIDE TO BUY A LIST, MarketPlace records the data (another often time-consuming process) and deducts the appropriate number of units from your purchase meter. Compared with LMP's price structure, the cost of a list is now significantly higher. To offset the price increase, you can now purchase part of a record; just mailing information for 1 credit per record, for example, or only telemarketing data for 2 credits per record.

Once a list has been purchased, MarketPlace can sort and print mailing labels in dozens of standard and Avery label formats. It can also print the list in four standard telemarketing and contact report formats, or in a custom report you design. If you want to use the data elsewhere—in a mailing program such as MacEnvelope, for example—MarketPlace can export the list as a tab-delimited text file as well.

Don't Call Your (List) Broker

MARKETPLACE BUSINESS REQUIRES 5MB of hard drive space and has an enormous appetite for RAM. Despite that, and the few previously mentioned imperfections and its higher per-record price, however, MarketPlace is genuinely impressive. Few major applications are as easy to use or as well explained, in print and on screen, as this one. Compared to most productivity programs, MarketPlace's cost-effectiveness is obvious and immediate.—ROBERT C. ECKHARDT

New FROM NIKON

When we introduced our first desktop scanner, we set a standard by which all others are judged. Now, with the new Nikon LS-3510AF, we've managed to set an even higher standard by bringing you a better, faster 35mm scanner. For less.

Better control. First we improved color scanning capability. The new LS-3510AF offers you the option of either standard 8-bit or true 12-bit scanning for even greater color resolution.

Next, we added Autofocus which automatically provides the sharpest image for each scan regardless of the type of mount used. The scanner also adapts to a wider range of film processing variables and "learns" about each manufacturer's

film as it's first scanned. Then it automatically corrects for gamma and color balance and stores all that information in its memory. A feature available only from Nikon.

Faster scans. With the LS-3510AF, you can complete an 8.3MB (2048 x 1365 pixels) scan suitable for full page, 133 line screen reproduction including Autofocus and other corrections in under 110 seconds.

New SCSI Interface.

A SCSI interface is now available for direct connection to a variety of desktop computers and workstations.

Automatic Operation. For high volume scanning requiring unattended operation, an optional Auto-feeder is available. It can scan up to 300 slides unattended.

Lower price. Faster scanning. Optional 12-bit operation. Your choice of GPIB or SCSI interfaces. A complete selection of film holders including ones for free-rotation and strip film. At a new, lower price. Nikon. Our standards are hard to beat.

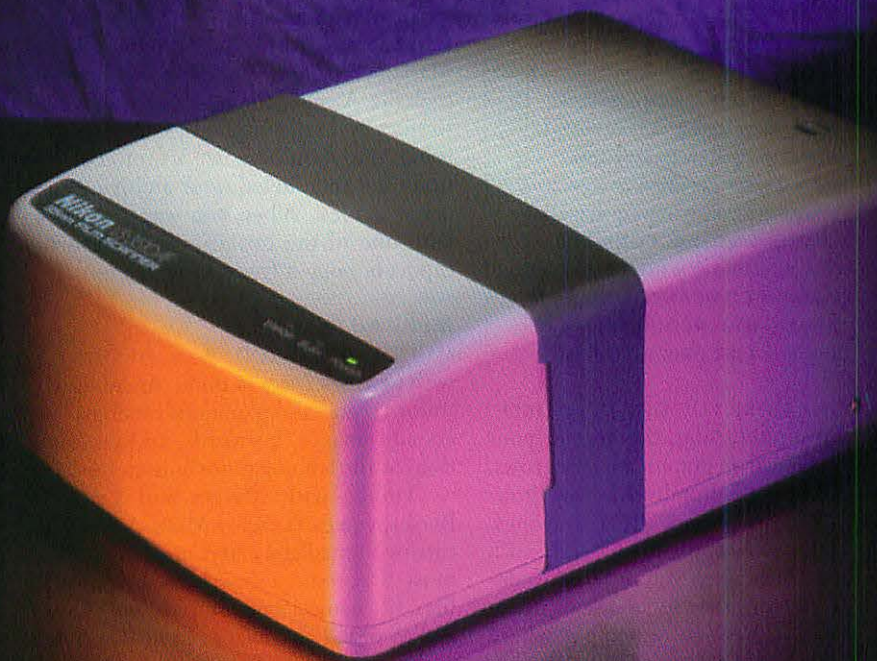
For more information, write or call: Nikon Electronic Imaging, Dept. B2, 101 Cleveland Avenue, Bayshore, NY 11706,

(516) 547-4355. Or call 1-800-52-NIKON for the nearest dealer.



Bundled with PhotoStyler for Windows 3.0 applications; Photoshop or ColorStudio for MAC applications.

THE LS-3510AF SCANNER. A HIGHER STANDARD OF QUALITY, SPEED AND ECONOMY.



Nikon® ELECTRONIC IMAGING

r e c r e a t i v i t y

PhotoStyler, Windows, Photoshop, ColorStudio, Macintosh are trademarks of their respective companies.

©1991 Nikon, Inc.

Circle 67 on reader service card

Graphics Cataloging Programs

Mariah 1.06

PROS: Catalogs sound files, animation files, text-only files, and resources; plays sound and animation files; has slide-show feature; strong exporting and file-conversion capabilities; easy to use. **CONS:** Inefficient use of hard drive space; limited search capabilities. **COMPANY:** Symmetry Software (602/998-9106). **REQUIRES:** Mac Plus; System 6.0.4; hard drive. **LIST PRICE:** \$149.

Multi-Ad Search 1.0

PROS: Efficient use of hard drive space; supports up to 128 simultaneous users; powerful search capabilities; extensive online help. **CONS:** No file-conversion facilities; inadequate handling of lost files. **COMPANY:** Multi-Ad Services (309/692-1530). **REQUIRES:** Mac Plus; 2MB of RAM. **LIST PRICE:** \$199.

PictureBook+ 1.0

PROS: Supports multiple open books; flexible image sorting; can lock books to prevent changes; contains a graphics and text editor; can specify an application type when exporting; can export resources; special printing formats. **CONS:** Inefficient use of hard drive space; limited search capabilities. **COMPANY:** Loop Software (415/326-4803). **REQUIRES:** Mac Plus; hard drive. **LIST PRICE:** \$129.95.

THE MORE YOU GET INTO desktop publishing, the greater your reliance on graphic images grows. You end up with hundreds, even thousands of clip art images, PICT drawings, and high-resolution TIFF and EPS graphics. Then when you're asked to design, say, a sales flier for a line of office supplies, you have to remember where you put that nice drawing of a paper clip. If you have Mariah, Multi-Ad Search, or PictureBook+, your problems are over.

Each enables you to create collections, or catalogs, of graphics files. You can assign keywords to images to categorize and locate them easily; view pictures as thumbnails or at full size; and once you find the one you want, you can copy and paste it into another application, such as a desktop publishing program.

Mariah

MARIAH CAN STORE AND ORGANIZE sounds, text-only files, and animation sequences; and you can play sounds and animations from within the program. If

you have a Mac LC or IIsi, or are running System 6.0.7 and have a MacroMind/Paracomp MacRecorder, you can record sounds directly into collection pages. Mariah can also convert files among several major graphics formats via its Export command. Marquee and lasso tools let you select all or part of a graphic and paste it to the Clipboard.

Searching by keyword in Mariah can be confusing at first because there are two search commands: filtering and gathering. Filtering lets you search by file type (one type or all) and keyword matches. You can also perform multiple searches, and Mariah will find just files that satisfy all search criteria (an AND search). Filtering works only with an open collection.

Mariah supports Boolean AND and OR criteria and lets you search several collections for up to three keywords. All searches are by keyword or by a single file type (such as PICT). If you want to find files created during a particular week, for example, you're out of luck.

Mariah's only significant problem is its profligate use of hard drive space. Rather than storing pointers to files, a Mariah collection contains a full copy of each file. A collection takes as much space to store as do the originals. I recommend using Mariah to organize art into collections and then deleting or archiving the original files. When you want to work with one of the images, use Mariah to export or copy it from the collection.

Multi-Ad Search

MULTI-AD SEARCH WAS DESIGNED with network users in mind. An administrator creates and maintains catalogs; users add images, keywords, and descriptions at the administrator's discretion.

Unlike with Mariah and PictureBook+, you can't view a Multi-Ad Search catalog immediately after opening it. You must first issue a search command (all files, file names containing the word *tree*, and so on). The images can be displayed as thumbnails or listed as text. Both views show the file name, graphics type, and drive location. Text-list mode also displays the file description, keywords, and any manufacturer-imposed expiration date for each graphic. You can get full-size images in either mode.

To copy Multi-Ad Search images to other programs, you can copy images to the Clipboard or use Multi-Ad Search's proprietary Clipboard format, FTCH. Rather than hold a copy of the image in RAM, FTCH points to the image's location on disk. At present, Multi-Ad Creator and QuarkXPress support FTCH.

Because files within a catalog can be scattered across multiple volumes, the

program provides a way to search for "lost" files—that is, files that have been moved or located on unmounted volumes or on volumes that have been deleted. If it cannot find a file, Multi-Ad Search presents a standard dialog box asking if you want to search for the file. When you close the found file, Multi-Ad Search loses sight of the file again. To permanently record the location, you need to run a separate Update procedure.

The only significant weakness of the program is its inability to convert files and to export partial images. Multi-Ad Search is ideal for the tasks for which it was designed—organizing and cataloging masses of images while using as little hard drive space as possible.

PictureBook+

PICTUREBOOK+ COMES IN TWO versions with identical features: a program and a desk accessory. The only difference is in the menu arrangement. Collections are called *books*, and images can be entered in three ways. First, by a simple copy and paste. Second, the Read Data command can add all or specific files within a folder. Finally, the program includes a Chooser document called LoopWriter that saves a document printed from any application as a PICT clipping in the book of your choice.

Once added to a book, files can be sorted by name, date, size, or file type. You can rearrange them by dragging the file name or its thumbnail to a new position in the list. There is a comment box for each graphic, where you can add a description, keywords, details of how the graphic was created, and any notes you like. Beware of using the standard *Edit* commands while writing comments, though. Instead of copying or cutting the notes you're working on, those commands copy or cut the picture.

PictureBook+'s editing tools are the most versatile of those offered by the three programs and include tools for cropping, resizing, and selecting portions of a graphic. You can also edit text images—cut and paste; change fonts and sizes; add, delete, or change text.

PictureBook+ does have its shortcomings. Like Mariah, PictureBook+ is cavalier in its use of hard drive space, with each book occupying approximately the same amount of space as the images it contains. Second, its search capabilities are weaker than those of the other programs. You can only search for a single text string within the images' comment boxes. But PictureBook+ excels in exporting graphics and in price.

continues

Visit Us At
Booth #B5616
MACWORLD
EXPOSITION



Apple & HP Make Great 300 dpi Printers. Xante Turns Them Into Lightning Fast 600 dpi SuperPrinters.

Now easy-to-install Accel-a-Writer™ controllers from Xante® turn any Apple® LaserWriter® or HP® LaserJet® into a true 600 x 600 dpi PostScript® compatible SuperPrinter.

Affordably.

Whether you're the owner of a LaserWriter or LaserJet, the Accel-a-Writer delivers other important advantages, too. Like an advanced RISC processor that *makes your printer* assemble text and graphics 4 to 12 times faster. Expanded connectivity for simultaneous operation of Apple® Macintosh®, IBM®/compatibles and other popular workstations. A SCSI port to plug in external hard drives for permanent storage of downloadable fonts and programs. And dual page processing which gives your printer the ability to print a page while assembling another. If you want all the speed and connectivity but don't currently need 600 x 600 resolution, Xante even makes an Accel-a-Writer for you at just \$1295!

Call Xante toll-free to order the Accel-a-Writer you need today. And get the professional advantages of increased resolution, speed and connectivity, affordably.

Accel-a-Writer™

FEATURES	XANTE ACCEL-A-WRITER	HP LASERJET I,I,II,III,III	APPLE LASERWRITER IIg	QMS-PS® 815MR™	LASERMASTER™ 1000 PERSONAL TYPESETTER
True 600 x 600 dpi	✓			✓	
RISC Processor	✓				
Standard 6MB RAM	✓			✓	✓
SCSI Connectivity	✓		✓		
Simultaneous Interfacing (AppleTalk, serial, parallel)	✓			✓	
Dual Page Processing	✓			✓	
Advanced Memory Management	✓			✓	
PostScript Compatibility	✓		✓	✓	?

Free Video Tape!
"How to Install your Accel-a-Writer" Fast and Easy.
1-800-926-8839



"The Accel-a-Writer II board turns any
LaserWriter II into a graphics speed demon..."
MacUser Magazine, Sept. 1991



Book 'Em

WHEN SELECTING A GRAPHICS ORGANIZER, there are a few issues to consider. First, be sure your system has sufficient RAM. If your catalogs will be large or hold memory-hogs such as TIFF files, consider 4MB to 8MB of RAM. Second, if you have many images to catalog, you'll need to invest a lot of time assigning descriptions and/or keywords to each file. Finally, as good as they are, all three programs share a weakness: they lack a simple way to deal with several images at a time. That's no problem if you've only got a few images. But imagine having a CD containing 375 Yuletide images all with the keyword *Christmas*.

If you have hundreds of images to catalog, particularly if the images are stored on a network, Multi-Ad Search is the obvious choice. It handles the task with ease while keeping RAM requirements to a minimum. If you deal with smaller groups of images but find exporting capabilities a prime requisite, either *Mariah* or *PictureBook+* will do the job. The main difference between the two is that *Mariah* catalogs sound and animation files and runs slide shows, while *PictureBook+* provides sophisticated editing capabilities.—STEVEN A. SCHWARTZ

Color Paint Program

Fractal Design
Painter 1.0

PROS: Inexpensive; easy to use; pressure-sensitive tools correspond to real-world models; 22 paper textures; compatible with Photoshop filters; built-in virtual memory. **CONS:** No type tool; no scaling or rotation; insufficient frisket control.

COMPANY: Fractal Design Corporation (408/688-8800). **REQUIRES:** Mac II; 2.5MB of RAM; hard drive; 8-bit monitor; 32-bit QuickDraw; System 6.0.5. Recommended: 4MB of RAM; color monitor; 24-bit color board; Wacom pressure-sensitive tablet. **LIST PRICE:** \$299.

Painter is an artist's program, pure and simple. Its structure and interface are so straightforward that any artist should be able to use the program in a matter of minutes. If you dig deeper into the program, you'll discover capabilities far beyond anything in *PixelPaint Pro*, *Studio/32*, or *Oasis*. And Painter's remarkable list price makes it the best painting bargain around.

But there are a few features you might miss. Painter is the only paint program that lacks a text tool. It is also missing any

transformation feature, be it scaling, rotation, slanting, reflection, or perspective.

The Painter's Workshop

THE PROGRAM OFFERS A PALETTE OF 52 tools. To make the tools more manageable, they are grouped by category: the pencils include a 2B pencil, a 500-pound pencil, and a color pencil; the brushes include horsehair, watercolor, and Japanese brushes, as well as a brush that paints in the styles of Seurat and van Gogh; the pens include a fine-point marker and a felt-tip; and so on.

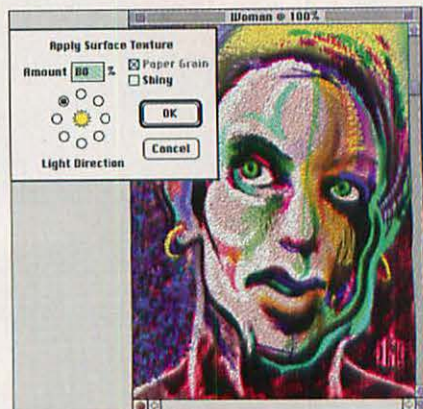
Each tool works like its real-world counterpart. The chalk draws a thick gritty line that covers existing images; the feather-tipped airbrush draws a thin line with soft edges that gradually darkens as you paint. You can edit the performance of any tool and design new tools using three modifiers: Brush Size, Brush Behavior, and Expression. Brush Size determines the diameter of the tool's tip, whether the tip is elliptical or round, and the shape of the tip when viewed from the side. For example, if the tip tapers dramatically to a sharp point, the tool paints like a sharpened pencil.

Using the Brush Behavior modifier, you might specify that, say, a single pencil stroke draw a jittery pattern of dots (similar to the way the Seurat tool creates a pattern of paint droplets) or you might have the pencil draw several lines at a time (the way the Van Gogh tool creates multiple brushstrokes). You can also specify the amount of color a tool picks up and smudges when you draw across existing colors, which simulates drawing with a felt-tip marker.

The third modifier, Expression, determines the performance of four variables—Size, Jitter, Opacity, and Color—over the course of a line. Each variable can fluctuate according to the speed, direction, or pressure of a stroke. For example, you can link size to speed to make a slow stroke create a thick line and a fast stroke create a thin line. You can link opacity to direction, making a vertical stroke transparent and a horizontal stroke opaque. Painter allows you to get variable lines using just a mouse.

Changes made to a tool remain in effect as long as you use that tool. To save changes, create a new tool (called a variation), which is stored permanently in a settings file. The tool can then be used in any existing or new painting.

Painter allows you to add surface texture to a painting after the fact. After selecting from 22 paper surfaces, you specify the relative location of the light source, the amount of light projected, and the shine of the paper. Deactivate



Applying Texture This portrait was drawn from scratch using Painter and a pressure-sensitive tablet. A rough paper surface was applied and lit from 11 o'clock. (Dialog box has been repositioned.)

the shine to create shadows in light colors; activate the shine to create highlights in dark colors. Once the surface texture has been applied, the painting as a whole appears more realistic.

Although Painter provides no image-editing filters, it supports any Adobe Photoshop-compatible external filter. This excludes Photoshop's built-in filters, such as blur and sharpen, but includes most of the special-effects filters as well as third-party filters such as those included in Aldus Gallery Effects.

Fractured Friskets

THE ONLY REAL PROBLEM I HAVE with Painter has to do with its frisket capability. (Generally known as a mask in other paint programs, a frisket is a stencil that limits the area in which you paint.) You can draw a freehand frisket inside Painter or load a precreated frisket. Ironically, while all the pre-created friskets provided with Painter are geometric ones—ellipses, rectangles, stars—Painter provides no means to draw a geometric frisket. The manual recommends that you use *ColorStudio* (the image-editing program created by the same programmers who developed Painter) to create more-complex geometric friskets.

Two additional tools let you move and rotate friskets. Unfortunately, there is no way to resize a frisket, and if you want to change its shape, you have to redraw the frisket from scratch. The final blow: in Painter friskets always have hard edges, and there isn't any way to create antialiased friskets.

Fix the frisket oversights and add a text tool, and Painter would be the most perfect paint program I can imagine. Just when I was about to write off high-end paint software, Painter gives me hope for the electronic palette.—DEKE MCCLELLAND

Hard Drive Utility Package

Hard Disk Toolkit 1.0

PROS: Comprehensive; universal disk-drive formatting; terrific benchmarking capability. **CONS:** May be risky in inexperienced hands. **COMPANY:** FWB (415/474-8055). **REQUIRES:** Mac Plus; System 6.0.2. **LIST PRICE:** \$199.95.

FWB, MAKER OF THE POCKET-Hammer50 and PocketHammer100 now brings you Hard Disk Toolkit (HDT), a suite of utilities that takes a holistic approach to hard drive health. HDT's seven modules do everything from optimizing a hard drive to testing and evaluating it for possible trouble down the road.

Two modules are geared primarily for periodic hard drive tune-ups. The first, HDT Primer, is an excellent formatting and testing utility. It scans the SCSI bus and displays any mounted SCSI devices. You then have the option of formatting, partitioning, updating, or verifying (testing) any of these drives. You can even change their desktop icons.

What distinguishes HDT Primer from similar utilities is that it enables you to universally configure different mechanisms—removables, opticals, flopticals, and hard drives from various vendors—sidestepping

problems that can occur when you're using drivers formatted with different software. HDT Primer's testing facility examines devices for bad sectors and if requested, maps them on screen.

HDT's other customizing module, World Control, lets you configure almost every aspect (150 parameters) of hard drive operation—far more control than most people need. This tool is for the most proficient technician only. Heed the manual's warnings—for example, "The page parameter customizing function of World Control is a very powerful tool, affecting the low-level operations of a hard drive. As a general rule, the page parameters are already set for optimal performance by HDT Primer." This brings me to my one complaint about HDT's manual. It explains each parameter and its function but not why you would want access to these intricate controls.

HDT BenchTest provides six comparison tests for measuring hard drive performance, each of which can be set for three levels of accuracy. You can compare several drives to one another or track one drive over time. You can also select parameters for testing. HDT BenchTest can also index drive performance data according to real-life uses to show how fast a drive would complete file processes. But know that testing takes time; the Maximum Accuracy BenchTest takes close to 10 minutes on a

100MB drive and requires you to skip loading any extensions (INITs) on start-up.

The remainder of HDT's modules help keep a hard drive running efficiently. HDT Extension lets you specify which SCSI addresses the CPU should search for at start-up, which can shorten start-up time. It also permits removable cartridge drives to be mounted empty, which makes cartridges mountable upon insertion. HDT Prober presents a preview of all of your SCSI devices (mounted or not) and gives you detailed information for all of them. You can also mount these devices from within Prober should they become unmounted.

HDT Util lets you adjust the size of the System heap, which is helpful to System 6 users who have lots of INITs. It also lets you protect files by locking them in place on your hard drive so they can't be copied to a floppy, another hard drive, or elsewhere on the native drive. This protection is limited: aliases created under System 7 can open files that have been locked this way, and someone could delete these files by taking them to the Trash and emptying it.

So, should you buy HDT? Evaluate your hardware situation first. Apple's Disk Tools, which comes with the system software, is adequate for most one-drive, one-CPU users. But if you tangle with varied types, sizes, and ages of hard drives, consider HDT.—MATTHEW R. CLARK

System Diagnostics Tool

Help 1.0

PROS: Thorough reports; can run simulations for different system software versions; finds duplicate programs. **CONS:** Does not report details of incompatibilities; knowledge base contains some errors; program quits if it runs out of memory. **COMPANY:** Teknosys (813/620-3494). **REQUIRES:** Mac Plus; hard drive; System 6.0. **LIST PRICE:** \$149; 10-pack \$795.

STRANGE THINGS HAPPEN TO MY Mac. The System crashes, applications quit unexpectedly, and cursors freeze. If you have more than a handful of applications, fonts, DAs, cdevs, and INITs (or extensions), it's likely that you've had similar problems.

For most users, troubleshooting is a matter of guesswork. Teknosys now offers Help, which analyzes a system's hardware, applications, start-up documents, and other files, and then reports the potential problems. Using Help is easy. To check out your entire system and all attached hard drives, just accept the defaults, and Help will begin its analysis. The more complicated the setup, the longer the process takes. My IICI has over 300MB of storage, spread out

over five volumes; analyzing this setup takes about 20 minutes.

Help presents an on-screen report and saves it to disk for future reference. (Note: Help's suggested memory allocation is 850K. That may not be enough for a large system. If Help completes the analysis and quits without displaying or saving the report, try increasing the memory allocation.)

A Help report has two main parts: configuration information, and diagnostics. The first lists all installed applications and gives details about the CPU; the contents of the System Folder; installed fonts, DAs, and drivers; and attached SCSI devices and expansion boards. The diagnostics report derives mainly from a knowledge base of known conflicts and incompatibilities. It shows conflicts among start-up documents; incompatibilities between installed programs and the Mac model, other attached hardware, and system software version in use; environmental factors (you don't need a heap adjuster with System 7, for instance); and damaged files. Help shows the locations of uninstalled INITs and cdevs, and duplicate copies of programs. One interesting feature is a system simulation that helps you gauge the problems you'll have if you upgrade to a new version of system software such as System 7.

Help's knowledge base is extensive but not error-free. Of the 34 incompatibilities

it listed for my System 7 simulation, 3 were incorrect (the recommended versions of the programs were already installed). However, given the size of the knowledge base and the many different sources Teknosys had to consult, some errors are to be expected.

The weakest part of Help is that it doesn't provide details concerning listed incompatibilities. Also, several programs reported to be incompatible with the IICI have been running fine on my machine for two years. Lacking specifics, it's hard to determine whether a program should be thrown away, or if the potential risk is acceptable, or if it's time to spring for an upgrade. Teknosys plans to offer more-detailed incompatibility information in future versions of Help, and to correct problems by providing online fixes.

Like an antivirus program, Help needs frequent updates to remain useful. Teknosys offers a \$75 annual subscription, entitling users to a minimum of four knowledge-base updates and any upgrades to the product itself.

Tackling system problems is not for the faint of heart. Help won't solve the problems for you, but it's unquestionably the best tool for locating them. Its extensive reports and the troubleshooting tips supplied by the manual should point you in the right direction. Help is a program we've long needed.—STEVEN A. SCHWARTZ

Address Book Database

DynoDex 2.0.4

PROS: Easy to use; good data-entry aids; fast. **CONS:** Single-user only; doesn't communicate with pocket electronic organizers. **COMPANY:** Portfolio Systems (408/252-0421). **REQUIRES:** Mac Plus; hard drive; System 6.0.4. **LIST PRICE:** \$125.

DYNODEX HAS BEEN UPGRADED, and the changes have addressed most of the shortcomings of version 1.1 (see *Macworld*, June 1990).

DynoDex 2.0 comes in two parts, an application and a desk accessory. You can enter data into the DA and use it to dial the phone, but to print you need the application. Both the DA and the application share the same easy-to-use entry screen. DynoDex 1.0 had some good data-entry aids; DynoDex 2.0 is better. One excellent new feature is Shorthand Keys, which lets you assign frequently used values to a list. For example, in the City field, when I type **lo**, DynoDex pops in **Los Angeles**. For Los Alamos, all I need to do is keep typing. Each field also contains a pop-up list of these values. Other new features include an option to open to a default file; an option to bring up the Find dialog box when you start the

program; the ability to use wild-card characters in the Find dialog; and provisions for dialing telephone credit card numbers.

DynoDex 2.0 adds extensive selecting and marking tools so that you can print only a portion of a database. By clicking next to a name in the Just Names list, or by clicking on a check box in the entry screen, you can mark a record for selection and printing. You can also use the Select function to search for specified criteria, and you can mark records in one operation.

The original DynoDex was the first application that printed double-sided address book pages. The current version adds print formats for Avery mailing labels, envelopes, index cards, and lists. Version 2.0 gives you control over the font, size, and style of each field. Portfolio Systems has included 44 pre-designed print formats, including specialized formats for the Apple StyleWriter and the Hewlett-Packard DeskWriter.

Printing from DynoDex is usually straightforward, but there can be some snags when printing double-sided address books. To Portfolio System's credit, the manual and Print dialogs have diagrams that help, but it's still easy to mess up and put the paper in incorrectly. Another problem is that to fully format a print job, you sometimes have to use up to four menu choices and dialog boxes. Some consolidation of functions would be a great help here.

DynoDex could still use some improvements, including some things that its competitors already have. The program doesn't automatically format phone numbers, or print sheets of return address labels, or let you list contacts by either (or both) name and profession, as does Address Book Plus 2.0. DynoDex files cannot be shared over a network. Although DynoDex 2.0 has improved its dialing capabilities, they don't match those provided by QuickDex II. And DynoDex doesn't export to personal organizers such as the Sharp Wizard or the Casio Boss.

With DynoDex 2.0, Portfolio Systems has markedly improved on what was already a good product. While it's not perfect, it is a fine product that is well worth the money. Recommended.—TOM NEGRINO

ADDRESS BOOKS

	DynoDex 2.0.4	Address Book Plus 2.0
File size after import	129K	245K
Import 1000 records	46	32
Sort 1000 records	5	13
Open application	11	24
Open DA	8	39

Test conditions: Macintosh SE/30, 8MB of RAM, System 7, extensions off, disk cache at minimum. Times in seconds.

Address Book Database

Address Book Plus 2.0

PROS: Prints in many different formats; can list by name, company, and/or profession. **CONS:** Cluttered interface; inadequate documentation. **COMPANY:** PowerUp Software (415/345-5900). **REQUIRES:** Mac Plus; System 6.0. Recommended: Hard drive. **LIST PRICE:** \$89.95.

ADDRESS BOOK PLUS 2.0 ADDS many features that improve the address book database and provide a great deal of flexibility. But Version 2.0 also adds complexity, and its cluttered interface makes the program difficult to understand and use.

Address Book Plus 2.0 now offers double-sided address book printing in a variety of formats, including Filofax, Day-Timer, Lefax, and Day Runner. You can order pin-feed and laser paper from PowerUp. There is also a format that makes 5½-by-4¼-inch double-sided address books with standard letter-size paper. You need to cut and fold the pages, but it's a straightforward process. PostNet bar codes have been added for envelopes.

PowerUp has improved the import and export capabilities; you can change the field

order, and it can translate your HyperCard Address stack into a text format for easy import. Version 2.0 offers a four-level sort capability, and you can find and replace data.

New fields for data entry have been added, including a fourth phone-number field and a field for identifying codes, such as *H* for home and *P* for pager. Other changes are automatic capitalization, the ability to change the field-tabling order, and an expanded area for notes.

The program is significantly more functional than the previous version. One of Address Book Plus's strengths is that it can list a particular person in an address book by name, profession, or company, or any combination of the three. One user, a film producer, uses this feature for his production crew contacts; all his camerapeople are listed together, as are all the electricians, grips, and so on.

Address Book Plus has a number of problems. It is annoying to have to switch between two overlapping windows to enter data; on a Classic-size monitor, the data entry window completely covers the Browse window. The ability to search and mark records by category for later printing is obscured by a confusing dialog box. Dialog boxes that make you check many choices in order to accomplish a single task are everywhere, and they clutter and unnecessarily complicate the interface.

The Address Book desk accessory is a real disappointment. On the plus side, you can enter, delete, and modify addresses, and telephone dialing is much better. But while the previous version was slow, version 2.0 isn't a significant improvement. On the 1000-record test file, the Address Book DA took 39 seconds to open; DynoDex 2.0 opened the file in under 10 seconds (see "Address Books," above). To make the DA usable you must leave it open all the time.

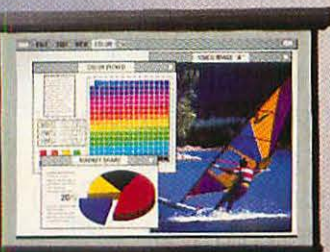
A big gripe concerns both the program and the manual. Printing double-sided address books is a major addition to version 2.0, yet it is poorly documented. It is confusing, and there isn't a single diagram of the process in the manual, the supplement, or the program. DynoDex documents the same process (although the process is a bit easier) with plenty of pictures in the manual and on screen.

Address Book Plus was a worthy competitor of DynoDex and other address managers, with features no other program could match (see *Macworld*, June 1990). Version 2.0 still has many strengths, but it has become more complex and harder to use, and the competition has caught up. It is a superior choice if you need to sort and list your contacts by profession or company. If this feature isn't important to you, check out the competition before you invest in Address Book Plus.—TOM NEGRINO



At Last, An LCD Projection Panel With All The Colors You Need To Get Your Presentation Moving.

The Sharp QA-1050. 185,000 Colors For Crisp Computer Images
And Live-Action Video.



Even the most complex multi-media presentations run smoothly with the Sharp QA-1050. Its 185,000 colors and TFT Active Matrix Technology guarantee computer and video images of unparalleled realism. And animated graphics and live-action sequences that move without ghosts and shadows.

The Sharp QA-1050 offers almost universal computer compatibility, including VGA and MAC® II. And, it also offers the convenience of remote control. In short, everything you need to present what no panel could present before: dramatic, true-to-life, full-motion color.

So, contact your local authorized Sharp Industrial LCD Products Dealer for a demonstration or call 1-201-529-8731. Fax 201-529-9636.

SHARP
FROM SHARP MINDS
COME SHARP PRODUCTS™

© 1991 Sharp Electronics Corporation, LCD Products Group, Sharp Plaza, Mahwah, NJ 07430-2135
Mac is a registered trademark of Apple Computer, Inc. PANTONE® Pantone, Inc. Sharp is not licensed by Pantone for color capability.

See us at Macworld Expo Booth # 547, Moscone Center

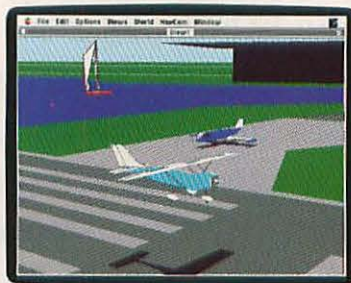
Circle 47 on reader service card

The only thing we intentionally left out of the new Microsoft Flight Simulator.



With the new Microsoft® Flight Simulator® for the Apple® Macintosh® you get the thrill and excitement of real flight, without the heartburn.

You can take off for the wild blue yonder in a Cessna, a Lear Jet®, a sailplane and even a Sopwith Camel. Or if you're really daring, test out your own theories of aerodynamics by designing and flying your own experimental aircraft.



The new Flight Simulator offers colorful 3-D graphics for more realism.

And with more than 100 million square miles to fly over and 125 airports, you'll have lots of places to visit.

So if you want to know more about the new Microsoft Flight Simulator, call us at (800) 541-1261, Department T27. We'll feed you the information right over the phone.

Microsoft®

Outliner

Acta 7

PROS: Supports System 7's publish and subscribe capabilities; plays and records sound notes; saves and opens many file formats; low RAM overhead.

CONS: One confusing keyboard command. **COMPANY:** Symmetry Software Corporation (602/998-9106).

REQUIRES: Mac Plus; System 6.0.5 (System 6.0.7 for sound; System 7 to access all features). **LIST PRICE:** \$149.

THE BEST THING ABOUT THIS System 7-savvy update to the Acta Advantage outliner is its ability to publish and subscribe to data. The next-best thing is its ability to incorporate sound in outlines. Combined, these features promise improved efficiency for workgroups because everybody can see and, to an extent, even hear what everybody else is doing.

Acta 7 is a straightforward outliner. With nary a bell or whistle, it does what outliners do: it helps the user arrange thoughts hierarchically. The program uses the metaphor of a family to describe relationships between ideas: the terms *mother*, *daughter*, *sister*, and *aunt* make it easy to visualize and remember the connections between parts of the outline. Additionally,

when ordering outline elements you can label them with decimal numbers, bullets, or the system of roman and arabic numerals and letters that we all learned in school.

What's exciting about an outliner that supports publish and subscribe is the way it enables members of a group to work independently on separate facets of one project and have their revisions immediately appear to other networked group members. Each participant in a project can keep up with changes without exchanging reports.

Acta's publish and subscribe can also be useful to the solo Acta user—increasingly so as System 7-savvy applications proliferate. Portions of an outline can be linked to other types of data residing on the hard drive—graphics, spreadsheets, databases, and word processor files.

Acta 7's ability to play, record, and publish sounds makes it promising for collaborative arts such as film, video, and sound design. Unfortunately, the only way to get sounds into an outline is to record them into a sound-capable Mac; you cannot paste or drag a sound file into a topic in the outline.

Another feature that makes Acta 7 a good workgroup tool is the ability of its format drivers to convert Scrapbook, More, ThinkTank, and text documents into Acta files. Acta 7 can also save its native files in 11 different formats, including MacDraw, Microsoft Word RTF, MacWrite, Mi-

crosoft Works, and WriteNow. To use a format driver, choose Save As from the menu bar and choose in the dialog box an icon that corresponds to the relevant application. That's a nice small touch; seeing an icon makes the mental connection intuitive and direct.

If you customarily use keyboard shortcuts such as ⌘-S to save and ⌘-W to close documents, you're bound to encounter an annoying feature of Acta 7's user interface. The first time I typed ⌘-W in Acta to close a document, it created a new sister heading instead. The Preferences dialog box under the Edit menu contains a Command Keys button, which brings up a dialog box offering the choice to designate either ⌘-S for save and ⌘-W for new sister heading, or ⌘-S for new sister and ⌘-W for save, but those are your only options; you can't assign some other combination that you might prefer. Either way, a common keyboard shortcut gets assigned to an unexpected function.

Acta 7 doesn't have More's rich word processing functions or Inspiration's diagramming ability, but Acta 7 is easy to learn and use, relatively inexpensive (compared to More 3.1, which retails for \$395, and Inspiration at \$295), and doesn't compete with System 7 for much RAM. For a networked group collaborating on a project outline, especially one that involves sound, Acta 7 is the ideal tool.—CARY TENNIS

Map-Drawing Program

Azimuth 2.0

PROS: Creates excellent maps; valuable designer's tool; 30-day money-back guarantee. **CONS:** Not compatible with four-color prepress; interface somewhat obtrusive; documentation needs work; anything smaller than a state must be hand-drawn.

COMPANY: Graphsoft (301/461-9488). **REQUIRES:** Mac Plus; second disk drive; System 6.0.2. Recommended: 2MB of RAM. **LIST PRICE:** \$395.

AZIMUTH IS A VALUABLE TOOL for generating custom maps of the earth's surface in any one of nine cartographic projections, viewed from any point in space. Created by Dick Furno, a cartographer for the *Washington Post*, Azimuth produces maps that meet the quality standards of most major newspapers and newsmagazines. Shortcomings restrict the current version's usefulness, however.

Azimuth is a set of very accurate, mathematical base-map outlines of continents, nations, the 50 U.S. states, and Canada's 10 provinces and 2 territories. The user selects which outlines to plot and designates the scale and dimensions of the finished map. The more outlines chosen,

the longer the map takes to plot. A Mac IIci with DayStar Fast Cache plotted all continents in about 40 seconds; plotting all nations took nearly 3 minutes.

A skilled cartographer can produce elegant maps with roads, lakes, and other details; symbols from Azimuth's library can be placed precisely to mark points of interest. The program supports solid and patterned fills and 256 colors, and it exports PICT, EPS, and DXF formats.

It takes practice to learn what scale, distance, and viewing angles produce a good map. It took me several tries to plot a perspective map of the earth that lay entirely on the page. Then I changed the viewing angle, and the map fell off the page again.

Azimuth's documentation is weak in places. The tutorial is helpful, but one lesson ends before explaining how to place the type shown in the example. The documentation mentions adding type to the base map, so I gave it a try—with awful results. (It's better to work on the finished map.)

The manual also refers to submenus as pop-up menus and states incorrectly that EPS-export supports only the standard LaserWriter font families. You're advised to save a copy of the base map under a different name so as not to alter the original (instead of using Get Info to lock the base map files). And the projections appendix does not illustrate all nine available projections.

Azimuth's interface is awkward in spots. I still can't get the hang of its unorthodox cropping procedures and its use of menu commands (instead of the now-standard eyedropper) to sample colors. And the Layers dialog box lacks a Cancel button.

What's more, Azimuth EPS files do not meet the needs of four-color prepress. You can place color EPS files in QuarkXPress layouts and print them in black and white, but the colors are not identified by CMYK or RGB values and so cannot be separated. (Adobe Separator can't help either.) I succeeded in getting separations by exporting an Azimuth map in PICT format, opening it in MacDraw Pro, assigning CMYK colors, saving it in EPS, and placing the file in QuarkXPress.

My experience with Graphsoft's technical support was mixed. Twice, promised callbacks never came. Then the first technician I spoke to conveyed inaccurate information, but he did refer me to another technician, who called me back with the solution to my problem.

Despite the interface and documentation, Azimuth is an excellent tool for designers working with black-and-white or color maps. In a newsroom where maps are used frequently, Azimuth would quickly pay for itself. Most other users should hold out for the next version's improvements before they part with \$395.—BILL JUSTIN

Ecology Education Stacks

Earthquest Explores Ecology

PROS: Important topic; easy HyperCard interface; lots to explore. **CONS:** Some aspects superficial; graphics and interface could be more engaging for kids. **COMPANY:** Earthquest (415/321-5838). **REQUIRES:** Mac Plus; hard drive; System 6.0.5. Recommended: 2MB of RAM. **LIST PRICE:** \$59.95.

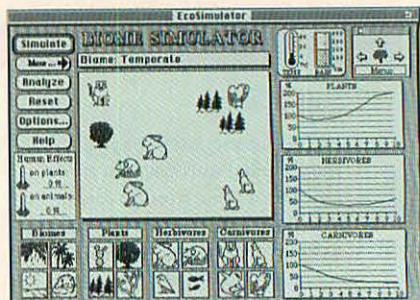
EARTHQUEST EXPLORES ECOLOGY teaches kids the basics of ecological science and related issues through animated simulations, games, graphics, and digitized sound. It's a neat idea, but the execution could be stronger and more polished. Earthquest Explores Ecology probably won't retain kids' attention enough to warrant \$59.95 to home users, but middle- and high-school science teachers could usefully bring it into their classrooms to add some computer-interactive spice to standard textbook learning.

Ecology is a collection of HyperCard 2.1 stacks bound together by ecological themes. It contains dozens of activities and topics for kids to explore, some of which will captivate them and teach them some-

thing significant. The Brazilian Rainforest, for example, lets kids explore by clicking on labels and pictures for information on everything from the forest canopy, to indigenous flora and fauna, to endangered wildlife. The EcoExplorer also has solid value, explaining the workings of complex ecosystems—from polar to desert to urban.

Some half-dozen of the games take just two or three minutes to play, such as Picture Matcher, where you match plants and animals to their names, and Name That Howl. On the other hand, the Animal Population, Human Population, and Biome simulations constitute valuable classroom instruction. The Biome simulation allows kids to put various plants and animals into an ecosystem and see how each population is affected by the environment and other life in it. Teachers will still want to supplement the simulations with handouts and explanations.

Most of the stacks contain special buttons that enhance the current topic. Click on the Speaker button to hear sounds associated with the featured environment—the caws of an exotic rain-forest bird, or the *whoop-whoop* of a jungle-dwelling primate. The Thumbs Down button offers down-to-earth explanations of environmental problems, from the depleted ozone layer to deforestation. The Thumbs Up button gives positive news about environmental progress and suggests how kids can be environmen-



Environmental Building Blocks The Biome Simulator lets kids assemble plant and animal life to build a range of ecosystems. Click to see Ecology's predictions of how each species will fare.

tally responsible citizens, including books to read and organizations to join.

More attention to design would have made Ecology more engaging to the young people who will use it. For instance, many of the card layouts are busy and cluttered, making them difficult to comprehend. Some of the graphics and digitized images are fine, but there is little color, a particular drawback for a kid-oriented program.

With better graphics, plus more-engaging games and stronger editorial content (some of the text is a bit technical), Earthquest Explores Ecology could make a great classroom tool, and even find a place in education-minded homes.—HELMUT KOBLER

Arcade Game

Glider 4.0

PROS: Very entertaining; excellent graphics; supports joystick; multichannel sound; includes game editor. **CONS:** Manual needs polish; clumsy System 7 help. **COMPANY:** Casady & Greene (408/484-9228). **REQUIRES:** Mac Plus; System 6.0.2. **LIST PRICE:** \$49.95.

GLIDER, BY JOHN CALHOUN, IS A delightful, peaceful arcade game that has been available as shareware since December 1988. Glider 4.0, available now from Casady & Greene, is surely destined to become a commercial classic.

The object is to fly a paper airplane through a house and escape to the outdoors, avoiding stationary obstacles such as tables and flying hazards like balloons and paper copters. Every room requires a different strategy. Is the hot-air vent close enough for you to catch an updraft? Can you collect an extra glider by grabbing a piece of paper without crashing into a bookshelf?

You have just four controls—forward, reverse, energize, and fire rubber bands; the challenge is in learning to use air currents to fly a plane without engines. Using the keyboard, mouse, or a joystick for control,

you stay aloft by gliding into hot-air columns provided by vents and candles. These propel you upward, but you have to maneuver skillfully to attain just the right height so you can make it to the next column. Some of the rooms are drafty, so you might find yourself being whooshed down a staircase or up through a transom. If you have trouble visualizing the air currents, there's an option to make them visible.

Some rooms contain objects that you can pick up for extra points, extra gliders, or extra power to fly out of a tricky situation. You also earn points for sailing through a room quickly. Be on the lookout for rubber bands, too; you can use them to get points for bringing down airborne hazards.

At \$49.95, Glider is a great entertainment value with appeal to gamers of all ages. Its graphics and sound are excellent, often humorous. One of my favorite audio effects is the Zen-like sound of a paper glider passing by an electric guitar.

Glider's home-style manual lends a personal touch to your gliding experience (though it does cry out for editorial and design help), conveying the feeling of learning game skills directly from a programmer who hopes to enhance your thrill of discovery. Surprises abound in Glider, so the manual warns you to skip the section on the Room Editor (for creating custom houses) until you've mastered the game.

Glider's System 7 balloon help has great content, but on a small screen the application's menu bar partially obscures it. I also observed a screen-dissolve problem that momentarily interfered with menu bar operation. Fortunately these interface weaknesses do not detract from the game play. I would like to see an Enter at Room X option added, for players who just can't master a certain room. This would help prevent frustrated gamers from giving up on Glider and moving on to other games.

The big surprise included with Glider 4.0 is Room Editor, a graphic programming tool that lets you experiment with game design. Room Editor includes everything you need to assemble a custom house to fly around in. My first three-room house—including a Mac's Headroom entertainment center sporting multiple TV sets, hot-air vents, and strategically placed fishbowls—took only a few minutes to construct. The only problem I had was that I kept thinking I should be able to double-click on objects to access their customizing dialog boxes. Piloting my glider through the minihouse was as much fun as building it had been.

Glider 4.0 is a great flying game. The Room Editor extends its life indefinitely, providing wonderful entertainment value for your gaming buck. This homegrown harvest of fun will be a welcome addition to any game library.—TONI THOMPSON

Power Up Your PowerBook



Trade-in
rebate or
case option
available.

And run some real applications.

You've just purchased one of the most sought after notebook computers ever made—Apple's new PowerBook. You bought it for the freedom it affords you, but you're frustrated by its limitations. Although equipped with powerful System 7, the PowerBook's storage and memory configuration barely allows you to do anything beyond booting up.

Don't despair. Now you can achieve the maximum power today's advanced technology offers, with Microtech's new *Roadrunner* internal hard drives and *Coyote* memory expansion kits.

Roadrunner 40i and 80i internal drives feature state-of-the-art 2.5" disk technology with 19ms access times. *Coyote* memory upgrades, designed

with low power pseudo-static RAM, are available in 2, 4, and 6MB configurations.

Power without dependability is no power at all. Since 1985, Microtech's *Commitment to Quality* has meant reliable products backed by the longest warranties in the industry. Our dedicated service and support teams are winners of *Macworld Magazine's Service Hero Awards* and ensure your satisfaction – guaranteed.

When you need the latest technology today with the confidence you will be supported tomorrow, call Microtech International and *POWER UP*.

For your nearest dealer call: **800-325-1895**
International inquiries: 203-468-6223/Fax 203-467-8124



MICROTECH
INTERNATIONAL, INC.

©1991 Microtech International, Inc. 158 Commerce Street, East Haven, CT 06512. All trademarks or registered trademarks are the property of their respective owners. Microtech reserves the right to change specifications without notice.

Circle 127 on reader service card

Color Hand Scanner

PageBrush Color for the Mac

PROS: None. **CONS:** Balky; unwieldy, poorly documented hardware and software; abominable technical support; expensive. **COMPANY:** Mouse Systems Corporation. **REQUIRES:** Color Mac with math coprocessor; 2MB of RAM; hard drive; System 6.0.3. Recommended: 4MB of RAM. **LIST PRICE:** \$799.95.

THE BEST PART OF MOUSE SYSTEMS' manual is the first sentence: "Mouse Systems believes in the quality of its products." If the PageBrush Color is any indication, the company must also believe in the tooth fairy. After submitting this hand-held scanner to lengthy tests, I discovered that no matter what I tried, launching the software (a jury-rigged edition of Olduvai Software's VideoPaint) resulted in a series of error messages. "Out of error handle," one said helpfully. "Not enough disk space, you will return to the Finder," said another (with 10MB of space available). "Fatal Error," said a third. (My thoughts exactly.)

Eventually, after unsuccessfully trying three different Mac models, three different

PageBrush units, System 6, System 7, and 1000 configurations of my SCSI chain, I was sent a prerelease copy of some new software that made the unit work. (If you're one of the hapless 200 who already bought the PageBrush, call the tech-support line and demand the update.)

Along the way, I called the tech-support line. The impatient technician asked if I'd correctly installed the NuBus board. I told him there *was* no NuBus board, that the PageBrush was a SCSI device. He then asked if my disk was compressed. I explained that I keep some of my files compressed with Disk Doubler and StuffIt, but... "No," he interrupted, "not files. Is your disk compressed?" (A PR person later apologized, telling me that this support person was a temp, and that the company was "undergoing some changes." Nonetheless, the same person was on duty six weeks later.)

I did finally get the thing to work when I removed all the INITs from my System Folder. (I spent a full workday trying to find out which specific INIT was causing the problem—an impossibility, since a particular configuration sometimes worked and sometimes failed.)

Unlike its monochrome counterpart, the color PageBrush program does not automatically stitch together the image as you wipe the scanner across the page. Af-

ter a moment, the image appears on the screen larger than actual size because of the scanner's 200-dpi maximum resolution. (Black and White mode sometimes fails to work at all, producing only a cloud of random black scratches at the top of the screen.)

In Full Color mode, a color image does indeed appear in the VideoPaint window. The one good idea of the package was adapting a real color paint program—VideoPaint—as the software. That way, once you scan an image, you can immediately start to edit it, finally saving it in PICT, TIFF, or another format. (And do remember to save the file. VideoPaint does not prompt you to save a file when you first close it—it just discards your work.)

Don't bother fiddling with the Mode or DPI buttons on the hand unit in an effort to make it work better. They don't do anything, according to the company. Changing some settings in the VideoPaint scanner dialog box won't help either—most of them are grayed out in Full Color mode. (What good do hue and saturation controls do you in black and white, anyway?)

It's a wonder anybody let this package out the door. You wind up wishing that Mouse Systems would test, polish, and support its products—instead of just believing in them.—DAVID POGUE

Interactive Magazine

Verbum Interactive 1.0

PROS: Beautiful graphic design; clear navigational structure; innovative interactive video roundtable. **CONS:** Very slow; uneven quality; interaction limited to non-sequential reading. **COMPANY:** Verbum. **REQUIRES:** Mac II; 5MB of RAM; 8-bit color; CD ROM drive; headphones or speakers. **LIST PRICE:** \$49.95.

VERBUM INTERACTIVE, AN INTERACTIVE interpretation and extension of *Verbum* magazine, is a two-CD set that incorporates text, graphics, audio, video, and animation. The set is organized into six main sections: feature stories, in-depth studies that include printable text, sound, video clips, and animations; a collection of multimedia projects from artists, vendors, and students; columns by *Verbum* editors, which include printable text and sample multimedia files; demos of products; a database of products and services; and a sort of multimedia museum shop, where you can browse and order other *Verbum* products, including books and back issues of the paper version of the magazine. Verbum Interactive does a lot of things right; it just does most of them too slowly, at least on my Mac II system.

Verbum Interactive's graphic design is exciting, easy to understand, and extremely readable on screen; and at every turn it showcases what can be accomplished. Plus the audio is terrific—there are 20 digitized audio segments that range from the ethereal to the seriously urban (including one track that my friend insists is the men-at-work theme from Bugs Bunny) as well as stereo tracks from Todd Rundgren, D'Cückoo, and others.

And you don't need a manual; the table of contents is laid out like a map, with icons representing each story clearly arranged hierarchically. Clicking on an icon opens a window that describes the story; a second click takes you to the selected story. You can also easily navigate each story and jump to others.

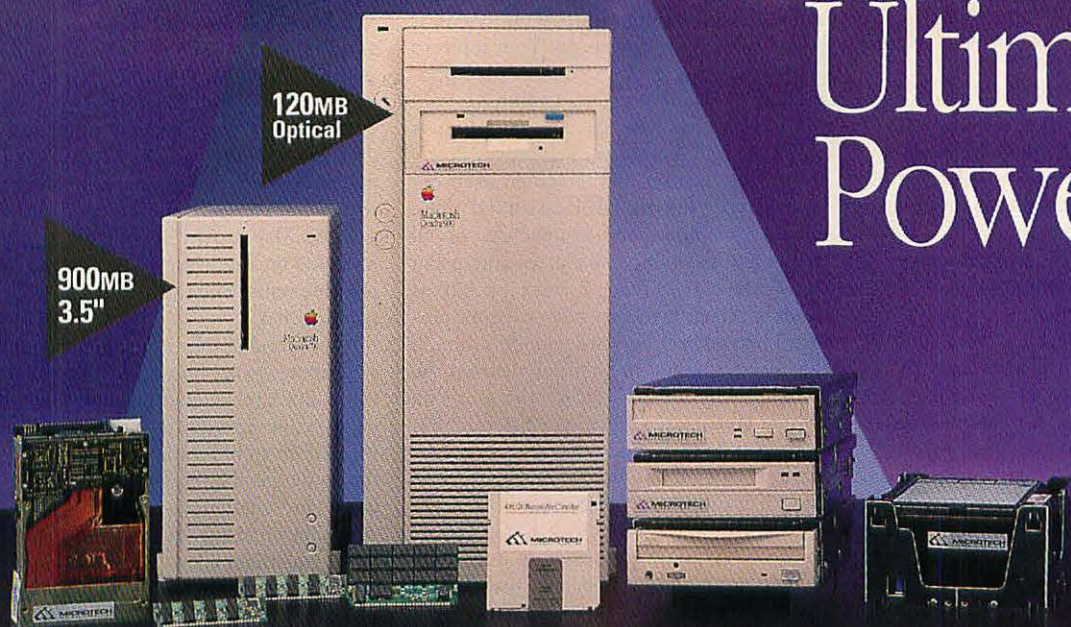
The features and columns both have a small but readable text box and supporting graphics. As you page through the text, a running-figure icon appears whenever there is an accompanying animation. These sections were the strongest; they were informative and used multimedia elements well. The regular column "Secrets of the Universe Revealed," for instance, is a tutorial on using Adobe Photoshop to create fancy type effects. I read the same article in the paper *Verbum* (issue 4.3), and found the interactive version clearer and much more interesting to read. And the "Verbum Round-

table" is an engaging panel discussion among six multimedia industry pundits. For each question asked, you can click on a picture of each participant and watch a video of their response. (Created with CoSA's PACo Producer, this is a pre-QuickTime video document, and an exciting example of things to come.)

The Gallery and Demos sections are a mixed bag. Some of the contributions are great, like the Living Photos exhibit of Graham Nash's photography, or the goofy collection of student work from Pasadena's Art Center College of Design. Others just aren't up to the quality of the rest of the magazine. And although some of the product demonstrations are well organized and informative, others are slick marketing sequences or limited versions of actual products.

All in all, I would recommend Verbum Interactive to anyone who wants to see a first-rate graphic and navigational design example or is interested in exploring the intersection of art, computer graphics, and interactive publishing (quarterly versions should be available starting in January 1992). But to anyone interested in reading the magazine, I'd say stick with the paper version. Waiting 30 to 60 seconds for many of the section transitions makes reading Verbum Interactive a frustrating experience.—LIZA WEIMAN

Ultimate Power



For the Ultimate Machines.

Microtech's new **Nova N900i** is the largest capacity internal drive now available for the Macintosh in a 3.5" form factor. With an 11ms access time, the N900i complete with *Norton Utilities for the Macintosh*, *LifeGuard* by Visionary Software, and a five year limited warranty,* is the ultimate internal drive for the Macintosh Quadra 700.

Customize your Macintosh Quadra 900 by choosing high performance solutions from Microtech's new line of internal mass storage devices, like the 120MB **OR120i** rewritable optical drive or the **CD600i** CD-ROM drive. Or choose the **T2000i** 2GB DAT tape backup system with network compatible *RunningBACK* archival software. The **R50i** removable drive provides unlimited storage capabilities plus Mac and DOS file sharing through *TransPORT*. And optimize your internal storage capacities to 1.6GB with the new **Nova N1600i**.

As a power user, you can also count on Microtech to bring you the latest technology in memory solutions. With both economical 16MB composite modules and *low profile* 16MB SIMMs featuring 16Mb DRAMs, you can maximize your Quadra 900 to 256MB of RAM!

Power without dependability is no power at all. Since 1985, Microtech's *Commitment to Quality* has meant reliable products backed by the longest warranties in the industry. Our dedicated service and support teams are winners of *Macworld Magazine's Service Hero Awards* and ensure your satisfaction – guaranteed.

When you need the latest technology today with the confidence that you will be supported tomorrow, call Microtech International for *Ultimate Power*.

For your nearest dealer call: **800-325-1895**
International inquiries: 203-468-6223/Fax 203-467-8124



MICROTECH
INTERNATIONAL, INC.

©1991 Microtech International, Inc. 158 Commerce St., East Haven, CT 06512. All trademarks are the property of their respective owners. *The five year warranty is offered on drives sold, delivered, and used in the U.S. and Canada. Certain restrictions apply. Microtech reserves the right to change specifications without notice.

Circle 80 on reader service card

Arcade Game

Aqua Blooper Piper

PROS: Colorful graphics; great sound effects; nonviolent theme; challenging for kids. **CONS:** Challenge may not sustain adult players. **COMPANY:** Casady & Greene (408/484-9228).

REQUIRES: Mac Plus; second disk drive; System 6.0.2. **LIST PRICE:** \$49.95.

DESPITE WHAT YOU MAY think, it's not always easy to review computer games. There are no features to analyze, no benchmarks to run—nothing on which to base a rational, objective critique. It's a matter of personal taste; you just like a game or you don't. Keep that in mind.

Aqua Blooper Piper, from Casady & Greene, is amusingly offbeat in theme, equipped with colorful graphics and great digitized sound, and refreshingly nonviolent to boot. Nonetheless it left me uninspired.

In Aqua Blooper Piper you play the part of a plumber—not the most glamorous role, perhaps, but a noble one in today's water-conservation-conscious world. And as real plumbers often do, you find yourself in a fussy customer's basement, confronting a water-leak crisis of major proportions. On the two facing walls are wide-open pipes. In

a few moments your impatient client is bound to turn the faucets on. Your job is to bridge the span from one wall to the opposite one before water starts to flow.

To do this, you have to install new plumbing fast. A conveyor belt moves slowly across the bottom of the screen carrying vertical pipes, horizontal pipes, curved pipes, terminator pipes, and connectors of all shapes and sizes. Pick up a piece and, using the keyboard to turn it right or left as needed, attach it to the wall's existing piping. Then go grab another segment, though this piece is bound to be different from the last and may not be ideal for the job. You have to take it anyway, being desperate, but be prepared for the consequences: the mish-mash of twisted and contorted pipes looks more like modern art than plumbing.

All the while, the clock is ticking. If you're too slow in placing pipe, segments fall off the conveyor and you lose points. Fail to complete the span within the time limit, and the water valves open and water gushes to the basement floor—game over. If you connect the wall pipes before the clock runs out, you're ready for the moment of truth: open the valves yourself, and see if the water flows through without a leak. If your system is sound, you win points for a good clock time (and extra points for greater complexity). Then it's on to the next troublesome basement—with a shorter time limit.

Aqua Blooper Piper's impressive graphics and sounds give the game a slick polish. The musical sound track is hip and fun, and the sound effects, such as the clink-clank of a dropped pipe and the dreaded chorus of rushing water, liven game play, too. The game runs in black and white, but to really appreciate it you need a color Macintosh. The rainbow graffiti scrawled on the basement walls, the gushing blue water, and the metallic pipes are all nice touches.

But good graphics and sound can carry a computer game only so far. A game's real value ultimately comes down to how well it keeps your attention, and Aqua Blooper Piper didn't hold mine very long. Though the game has the requisite elements of suspense and challenge—the race against the clock, the concentration on fitting the pipes in the way that makes the most sense—they don't succeed in making play engaging. I tired after only a handful of tries.

But remember the personal taste issue. I've never been a great fan of games that are based on manipulating shapes in a hurry—this includes such popular titles as Electronic Arts' Pipe Dream and Spectrum HoloByte's Tetris. People who find this genre of game addicting might do well to take a look at Aqua Blooper Piper. As for me, I'm going to keep shopping for a different kind of challenge.—HELMUT KOBLER

Interactive Game

3 in Three

PROS: Challenging and creative puzzles; beautiful graphics; entertaining animated scenes. **CONS:** Sometimes too easy; sometimes mentally taxing.

COMPANY: Inline Design (203/364-0063). **REQUIRES:** Mac Plus; Mac II and 2MB of RAM for color; hard drive; System 6.0.5. **LIST PRICE:** \$49.95.

3IN THREE IS NOT AN ADVENTURE game, an arcade game, or an interactive movie. So what is it? Inline Design calls it an "interactive treasure hunt." To me, it was more of an ultramodern *Alice's Adventures in Wonderland*.

It begins when the number 3 is zapped off her comfortable spreadsheet by an unexpected power surge. Yes, it's a high-tech rabbit hole, and this modern Alice lands in her own sort of Wonderland, populated by letters with personalities and other fantastic characters, and set amid Cliff Johnson's whimsical images of a computer's innards.

However, this is where 3 in Three becomes a game. In Lewis Carroll's *Wonderland*, the puns, puzzles, anagrams, and logic problems were there simply to amuse the perceptive. In 3 in Three, the player (representing the number 3) must solve a

puzzle before the story can continue. And the puzzles are wonderful.

They range from simple codes to intricate conundrums. There are word puzzles, logic puzzles, pattern puzzles, and a few more that are undefinable. There are fast-paced character recognition tests, variations on classic brainteasers, jumbled-word games, and plenty of riddles. In some cases, understanding the puzzle is half the solution. If you like puzzles, you will love 3 in Three.

A few of the puzzles are too easy. A few are easy to figure out but take a long time to finish. A few require flashes of insight (which, of course, do not always come on schedule). But most of them are amazing. They're creative, fun, entertaining, and best of all, challenging.

After you complete each puzzle, you are rewarded with a brief animated scene. The scenes are clever and humorous, filled with puns and the amusing complaints of 3 (who just wants to find her way back to the spreadsheet). But because you don't have to solve the puzzles in strict order, the scenes aren't progressive steps in a story. Each one is completely different, though the scenes don't further the plot, and by the end of the game they get a little repetitive. Still, this repetition is more than compensated for by your ability to skip a particularly frustrating puzzle before you start clenching your

teeth, pulling out your hair, and swearing at your computer.

The graphics for both the animation and the puzzles are beautiful, although it wasn't always clear to me what they represented. Still, this is part of the slightly surreal flavor of the game. On a color monitor, some elements are vivid, almost garish, while others are soft and muted.

The sound effects throughout the game are fun, including captions that "pop" into existence and some expressive squeaks, but after three or four hours of playing the game, you might want to turn them off. Fortunately, Inline Design has provided that as an option.

I discovered one bug, but you'll find it only if you're using a Mac Plus. On a Plus, if you quit without saving the game, your system might reboot. Inline Design is working on it, and by the time you read this, it might even be fixed.

3 in Three is not for everyone. Hand-eye coordination counts a little bit, but not nearly as much as concentration and planning. Randomly guessing answers will get you nowhere, and some puzzles can take a frustratingly long time to figure out. But if you like puzzles, 3 in Three is an obsessively good set of them. I found myself getting up early for extra playing time—words that will shock anyone who knows me.—WENDY SHARP

Backup. For people who don't.



Everyone who uses a Macintosh® ought to back up regularly. But most people don't back up at all.

In fact, if the people you work with are like those working in most places we know, about the only way their data is going to get backed up is if it happens without them.

Guess what?

Now it can.

Now you can set up fully automatic, unattended backups for every Mac in the house.

What's more, you can easily customize the nature and timing of each one to suit *your* specifications.

And transform a simple, effective backup policy from fantasy into fact.

All you need is Fastback Plus.

The Macintosh version of the world's most popular backup software is also the Mac world's most flexible backup software.

Along with being System7 savvy, Version 2.6 lets you back up to just about anything you can think of, from floppies and hard disks to tape drives and any HFS device.

It also lets you back up in the background while you're using an application in the foreground.

Using Fastback Plus for Macs is very much like using Fastback Plus for PCs—same look, same functionality.

Same backups, even.

That's right. You can actually restore a Mac file directly onto a PC, and vice versa.

Nobody else can do that.

But then, nobody else can back up more than 1MB per minute on a Mac.

And no other program is backed up by our vaunted 24-hour toll-free technical support.

There's more. So pick up the phone. Dial 1-800-477-8212.

And tell everyone to stand back.



FIFTH GENERATION SYSTEMS, INC

Circle 130 on reader service card

Backup Utility

Backmatic 2.01

PROS: Easy automated daily backup; backs up to shared volumes; timed execution; extensive file filters. **CONS:** Can't back up to tape; no built-in file compression. **COMPANY:** Magic Software (402/291-0670). **REQUIRES:** Mac Plus; System 6.0.3. **LIST PRICE:** \$99.95.

IF YOU'RE LIKE ME, ROUTINE backups are the last thing on your mind. Never mind that losing, damaging, or accidentally trashing files can mean the loss of days, even weeks, of hard work. Backmatic is a neat little utility that makes a tedious chore simple and painless.

Magic Software markets Backmatic as a supplement to an existing backup routine rather than as a full-fledged backup program, primarily because it doesn't support tape drives or compress files. Backmatic is a Control Panel device and can be configured in a number of ways to back up the contents of any attached volume automatically or manually. The backup medium can be any mountable device in the Finder—a floppy disk, a hard drive, a removable cartridge drive, or an optical drive.

Setting up Backmatic is straightforward. The first step is determining which

files to back up. Backmatic offers two types of incremental backup, Scan and Filter. Using Scan, you designate which volumes and folders should be checked for new or modified files. Filter lets you specify files for backup according to their type and creator.

Next you decide when and how often you want to back up. You can back up once a day at a specified time or at regular intervals. Choosing the frequency is not as simple as selecting "every 15 minutes" from a dialog box. Instead, you set the number of backups in a span of hours, say, five backups between 1 p.m. and 7 p.m.

Backmatic's speed and features, with the exception of file compression, compare favorably with backup packages such as Dantz Development's Restrospect and Fifth Generation Systems' FastBack II. Like them, Backmatic performs both full and incremental backups, but the simplicity of the latter is a real strong point. Another neat feature is Backmatic's ability to automatically mount and back up to a file server.

Backmatic is especially good at reminding the forgetful to perform routine backups. It unobtrusively reminds me every day, before shutdown, that I need to back up, and even offers the option to decline. On a daily basis, this is all the interaction you have with the application. Choose Shut Down from the Finder, and a dialog box asks if you want to proceed with the backup

using the specified settings. Backmatic then speedily scans your hard drive to determine which files were modified or created since the last backup; and one or two disk-swaps later, you are completely backed up. On an average day my incremental back-ups take three minutes or so, with new and modified files fitting conveniently on one floppy. Backmatic has no file-compression routine of its own, but it's easy to add that feature by using Backmatic in conjunction with DiskDoubler or StuffIt Deluxe.

To test Backmatic I ran a full backup of several folders containing my most important data—checkbook information, address books, and a recipe for an eggplant frittata. Backmatic took close to 12 minutes to scan my 80MB hard drive completely and back up the 10MB of selected data—about the same time as with FastBack and Restrospect.

Compared with Restrospect Remote (\$249) and FastBack (\$189), Backmatic, at \$99.95, is clearly a great value for those whose backup needs are moderate. If you require data compression, the decision becomes somewhat cloudier. If you need to buy StuffIt or DiskDoubler to gain compression capabilities, you might as well get one of the higher-priced packages. But if you already own one of those applications, or if simple backups meet your needs, then Backmatic may be just the ticket for your peace of mind.—MATTHEW R. CLARK

Statistical Analysis Program

JMP 2.0

PROS: Strong on both classical statistics and visualization; includes 3-D spin features; includes quality-control statistics. **CONS:** Meager nonparametric set; no time-series analysis. **COMPANY:** SAS Institute (919/677-8000). **REQUIRES:** Mac Plus; 2MB of RAM; hard drive. **LIST PRICE:** \$695.

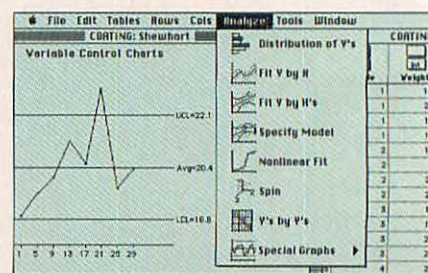
THE FIRST VERSION OF JMP HAD two principal strengths: it rigorously employed the modern statistical notion that it's critical to explore data graphically before simply pouring numbers into a routine, and the first version featured an interface designed to anticipate a user's most likely statistical approach. After you enter or import data into JMP's spreadsheet-style data tables, you typically select an analysis mode from the Analyze menu (the choices are Distribution of Y's, Fit Y by X or X's, Specify Model, Nonlinear Fit, Spin, Y's by Y's, and Special Graphs). When the plot associated with the analysis appears, it includes buttons and pop-ups you can activate for further study. For example, if you pick Y's by Y's, you will see a screen with buttons for Correlation, Scatter Plot Matrix, Inverse, and Partial Cor-

relation, and for an outlier plot. You might get the information you need simply by clicking on Correlation, or check the other options for more-detailed information.

The interface anticipates not only the questions you are likely to ask about your data, but also the order in which you are likely to ask them. JMP's manual is a model of concise clarity in explaining these questions, and the interactive Help system puts most of this information on screen when you need it.

JMP shines at any analytic task that's equivalent to linear or nonlinear regression analysis (see "Pictures Worth 10K Words"). In version 2.0, new types of tests have been added to the Special Graphs selection: three nonparametric tests, Pareto charts and Shewhart-style control charts for quality control, and response surface analysis. Bar charts and pie charts are now provided so that you can create simplified presentations of results, although JMP's tools for annotating statistics charts help display results for a nonmathematical audience. File import has been simplified, and SAS will supply, on request, Macintosh Communications Tools with which experienced Macintosh users can log data directly from analytical instruments.

JMP is easy to use, but it comprises a formidable assortment of functions. There are packages with longer lists of tests



Pictures Worth 10K Words JMP expects you to pick your statistical tests from this set of graphical icons under the Analyze menu.

(SYSTAT, for example), but JMP puts a long list of the most useful analyses right at your fingertips, and makes a credible attempt at teaching you to use them. It's not cheap (there's a case-limited, lower-cost student version called JMP In, and academic site licensing), but it delivers lots of value for the money—the Spin option alone could sell for several hundred dollars as a stand-alone 3-D data-analysis program. Significantly, JMP's visualization features are carefully coordinated with numerical statistics that follow the text-and-tables approach of traditional textbooks, so it serves a wide range of classroom purposes. JMP is one of the rare programs that accommodates both beginners and experts, an admirable effort indeed.—CHARLES SEITER



Wouldn't it be nice to have a modem that ran faster yet didn't cost an arm and a leg?

That's precisely what the new V.32 OPTIMA™ 96 is all about.

It delivers 9600 bps connections and up to 38,400 bps throughput. It features V.42 error-control, V.42bis data compression, and it's compatible with MNP levels 2 through 5.

The OPTIMA 96 has all of the features you

need for easy communications with PCs, mainframes, and all types of on-line services and bulletin boards. It even negotiates the best connection automatically.

To get you up and running right out of the box, every OPTIMA 96 modem comes complete with Hayes Smartcom EZ communications software. Plus special offer coupons good for software upgrades and on-line connections.

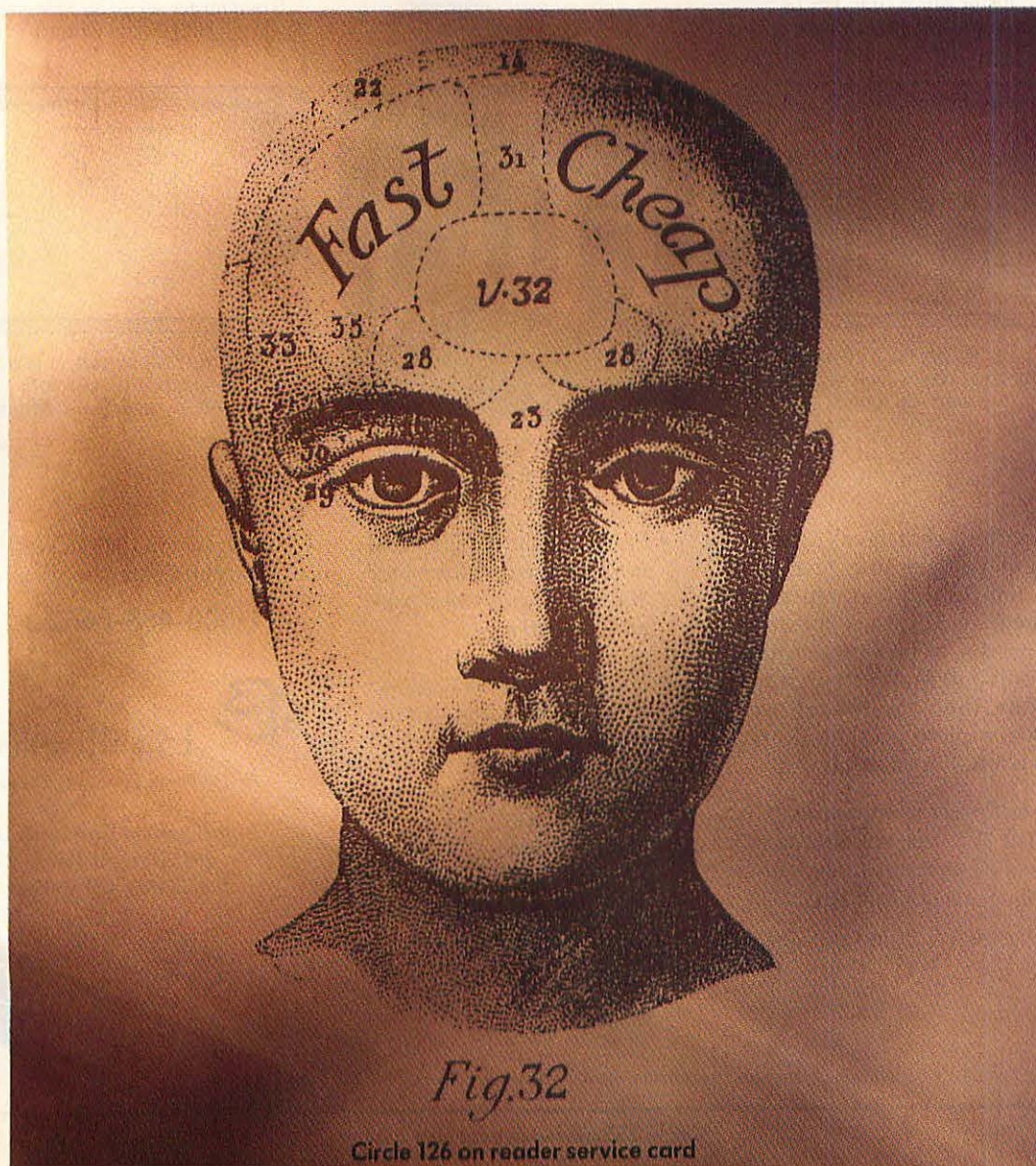
All of this for a remarkably low price.

Anything else on your mind? If so, please call us at 1-800-635-1225 for our fully detailed OPTIMA 96 brochure.

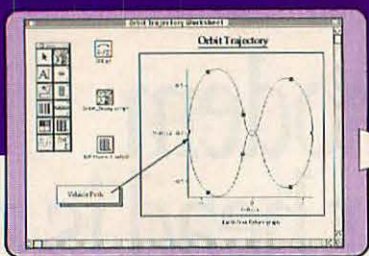
Our technology has the computer world talking. More than ever.



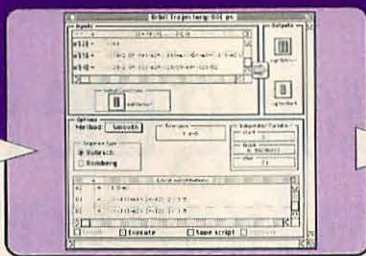
Introducing the modem that knows where your head is at.



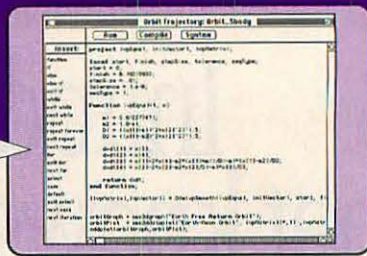
FINALLY A SINGLE ENVIRONMENT For Solving Real World Engineering Problems!



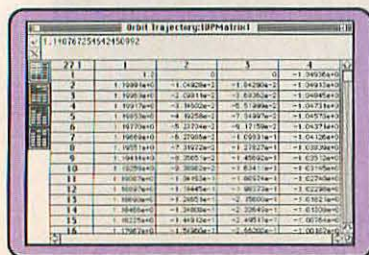
Just a click accesses any tool, data, or editor from HiQ's Project Worksheet interface.



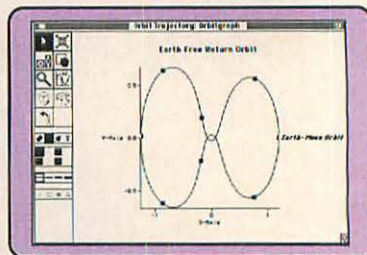
HiQ's Problem Solver editors automatically generate HiQ-Script code...



...which can then be edited or placed in a larger script by using the HiQ-Script editor.



Your scripts (as well as the Problem Solvers) can generate numerical and ...



... graphical output, which automatically opens into customized, easy-to-use editors.

No matter what level of engineering or scientific task you face, the fully integrated environment of HiQ has the tools you need – to pose your problem, solve it, graph it, organize the data, then design and print out a complete presentation of your work. For example:

- The Project Worksheet interface that lets you organize and dynamically link everything you create in HiQ
- Over 500 built-in functions

- Problem Solvers™, graphical interfaces that deliver over 100 of the world's most powerful algorithms
- HiQ-Script™, a new structured "4GL" programming language for engineers
- The Grapher™, a real-time, 2D & 3D interactive graphical editor

Just \$695 will put HiQ on your Macintosh today. [Visa • AmEx • MC]

Come see HiQ at MacWorld, Moscone Center, or call us at:

1-800-488-8662



Bimillennium

First in Power Computing Software

Bimillennium Corporation
101 Albright Way
Los Gatos, CA 95030

Product names are trademarks or registered trademarks of their respective holders.

Circle 233 on reader service card

NOW SHIPPING!
BOOTH #56

Interactive Videodisc

Michelagnolo:
Self-Portrait

PROS: Interesting film on Michelangelo; extensive still-frame collection of his works; recorded translations of many of the artist's writings. **CONS:** HyperCard interface provides good access to all materials but adds no information of its own; no program documentation. **COMPANY:** The Voyager Company (310/451-1383). **REQUIRES:** Mac Plus; hard drive; computer-controlled videodisc player; television; System 6.0.5; HyperCard 2.0.2. **LIST PRICE:** Two-laser-disc set \$99.95; HyperCard Companion \$59.95.

AS A PIECE OF INTERACTIVE programming, Voyager's Michelagnolo: Self-Portrait is no Sistine Chapel. Although this interactive videodisc might not be a multimedia masterpiece, it is still an excellent educational resource as well as an engaging introduction to the great Florentine sculptor, architect, and painter (whose name the title renders in his native dialect).

The package is built around a 1989 film, which provides the package's title and takes up the better part of the set. To round

out the picture, Voyager assembled thousands of still-frame views of Michelangelo's major works plus some 500 of his sketches; translations of his letters (squirreled away on the second, unused audio track of the videodiscs); and an earlier film, *The Titan: Story of Michelangelo* (this takes up less disc space than the 1989 film because it's stored in a format that doesn't allow for single-frame access).

Michelagnolo, the film, skillfully and movingly tells the story of Michelangelo's artistic life in a first-person narrative drawn mainly from the artist's own writings. As he speaks of his physical ordeals, political fears, and constant money worries—as well as his influences, ideas, and ambitions—we learn to appreciate the human being behind the heroic legend of *Il Divino*, as he was known. The other film, *The Titan*, won an Oscar in 1951 but sounds a bit corny today. Made by the same producer, this black-and-white effort offers little information not covered in *Michelagnolo*.

The Michelagnolo HyperCard Companion does a good job of providing access to the contents of the videodiscs. You can search through the stills by title of a work, by medium, year of creation, or other standard criteria.

Tools like the Timeline and Sistine Chapel map let you jump to snips of the film that deal with individual works of art

or episodes in the artist's life. Michelangelo's letters and writings have been similarly cross-referenced so that they too are accessible by subject or date. Teachers will appreciate the Companion's Slide Show feature, which lets you queue up a playlist of stills, motion sequences, and letters and then give a presentation.

The Companion stack's shortcoming is that it offers virtually no content of its own—no criticism or historical information about the works, no background about the times or the individuals in Michelangelo's life, no transcriptions of the letters (it would be nice to know how to spell some of those names). This reference information could have added depth to this package and provided for the type of interplay between text, imagery, and sound that makes great multimedia projects—like Voyager's own Louvre series—add up to more than the sum of their parts.

As it is, Michelagnolo about equals the sum of its parts: a good movie, a good collection of stills, interesting letters, and a useful interface. There's nothing revolutionary here, nothing to make you go out and buy a videodisc player if you don't have one, but the package works. If it contains somewhat less information than a good art book, well, a book can't pan to walk you through the Medici chapel or show you the David in the round.—JOE MATAZZONI

Groupware

Instant Update 1.0

PROS: Users can update documents at their leisure; shows who made changes on a paragraph-by-paragraph basis; uses XTND technology for importing documents; can edit documents offline. **CONS:** Some problems with XTND filters and document formatting. **COMPANY:** On Technology (517/876-0900). **REQUIRES:** Mac Plus; LocalTalk or Ethernet; System 6.0.4. **LIST PRICE:** \$995; two-user pack \$99; five-user pack \$995.

TRADING INFORMATION OVER a network can be accomplished in a number of ways. You can use a file server to have colleagues read or copy the file, you can use a file-transfer program to send a file to a group of users, or you can enclose a file in an E-mail message. But it's next to impossible to see what changes someone has made to your file until they send it back to you. Enter Instant Update.

Instant Update's document server can be installed on any networked Mac to store Instant Update (IU) documents and any changes made to the documents. Any IU user can create a document, store it on the document server, and indicate which IU users should receive a copy. IU then sends

a copy to each recipient, who can make changes to the document.

Whenever you make changes to a shared IU document and click on the Update button, all the recipients of that document are notified that changes have been made. When a recipient selects that document and clicks on the Update button, the changed document is displayed.

Instant Update's interface looks like a typical Mac word processor, with the usual ruler at the top of the document window. You can enter text and change styles, as well as paste graphics and create tables.

You don't have to create documents from scratch. You can copy and paste via the Clipboard, and Instant Update uses APDA's XTND technology to offer filters for reading foreign file formats, such as WordPerfect for the PC, Microsoft Word, and MacWrite formats. I did run into problems, however. Instant Update and MacWrite II, which both use the XTND technology, displayed different formatting for the same imported WordPerfect for the PC document.

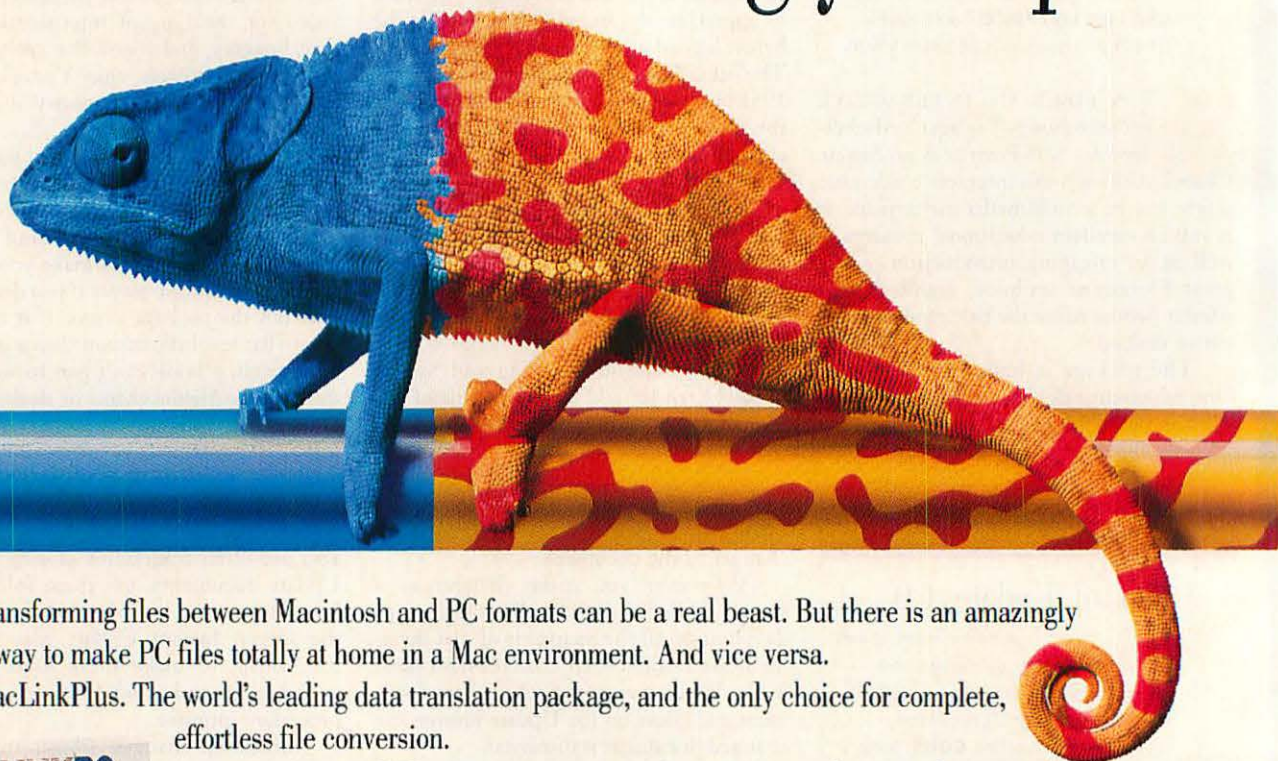
The Instant Update server stores copies of all the IU documents and the changes that users make to them. When you open the Instant Update Document Management window on your Mac, you see your IU documents in a folder bearing your name as well as any public doc-

uments (in a folder marked Public). You can also use other folders for storing Instant Update documents, but these folders are located on your local hard drive, not on the server. Instant Update uses an odd mechanism to make these local folders available. It works, but I did not find the procedure intuitive.

Incoming changes (those made by other users) and outgoing changes (those made by you) to documents are indicated in the Document Management window by small arrows added to a document's icon. When you open a document and click on the Update button, the paragraphs containing changes within that document have a vertical bar next to them (in tables, each cell can have a vertical bar). When you click next to the bar, the name of the user who made the changes and the time the changes were made are displayed. Instant Update can also notify you, with a flashing icon in the menu bar or with a beep, whenever someone makes changes to specific documents.

Instant Update is a good way to distribute often-used documents among a workgroup. It's good for handling such things as an order sheet for office supplies, boilerplate docs, a vacation planner, and yes, even the football pool. It just might change the way you track things in your office.—DAVE KOSIUR

With MacLinkPlus, Transforming Files Between Macs And PCs Is Amazingly Simple.



Transforming files between Macintosh and PC formats can be a real beast. But there is an amazingly simple way to make PC files totally at home in a Mac environment. And vice versa.

MacLinkPlus. The world's leading data translation package, and the only choice for complete, effortless file conversion.



MacLinkPlus is a vast resource of over 400 translator combinations for the most popular programs running under Macintosh, MS-DOS or Windows. Including Microsoft Word, WordPerfect, Excel, Ami Professional, MultiMate and dozens of other word processing, spreadsheet, database and graphics applications.

File translations are automatic with "point-and-click" simplicity, and we include DOS Mounter software so MS-DOS disks show up right on your Macintosh desktop. We even offer complete compatibility with XTND file conversion.

No matter what version of System you're running, MacLinkPlus sets the standard in ease of use. And our new version 6.0 is packed with features that exploit System 7 innovations.

For file translations when you're connected via a network, file server, or SuperDrive, all you need is MacLinkPlus/Translators. And for the added capability of file transfer using a cable or modem, MacLinkPlus/PC includes the same full array of translators as well as a serial cable and communications software.

Get MacLinkPlus 6.0 today. And watch all your PC files transform themselves before your very eyes. For more information, call DataViz at (800) 733-0030.

DATAVIZTM
THE DATABRIDGE SPECIALISTS

Utility Collection

Now Utilities 3.0.1

PROS: Excellent value; many individual utilities compare favorably with major competitors; addresses many System 7 deficiencies. **CONS:** Complex; redundant elements of different utilities should be combined; manual still needs improvement. **COMPANY:** Now Software (503/274-2800). **REQUIRES:** Mac Plus; 2MB of RAM; hard drive; System 6.0.4. **LIST PRICE:** \$129.

VERSION 3.0.1 INCLUDES COSMETIC improvements like color icons, as well as the elimination of three utilities—Customizer, FinderKeys, and PrintPreviewer—and the addition of an installer program and a new utility, NowSave. Since Now Utilities includes ten separate programs and a variety of sample and support files spread over two disks, the installer brings order to what was becoming a chaotic situation. It also displays a description of each utility and tells you how much RAM and disk space each requires. NowSave automatically saves your documents as you work; you tell it which applications you want it to work with, and whether it should save after a specified number of keystrokes, mouse clicks, or minutes.

All the other improvements involve major and minor revisions of version 2 utilities. In version 2, for example, Super Boomerang inserted a submenu of files in any application's Open command and added file-management commands and lists of disks, files, and folders to all Open and Save dialog boxes. Super Boomerang now also adds a submenu to the Apple menu from which you can launch listed applications or open listed files or folders. In addition, Super Boomerang can now search for text within files as well as for file names. In version 2, WYSIWYG Menus displayed menus of fonts, sizes, and styles in the corresponding typeface and organized Font menus by family. With version 3, family members are now listed in submenus (as in Adobe Type Reunion); you can change the order of the names in the Font menus; you can turn the WYSIWYG display off for specific applications or fonts (such as graphic fonts); and font, size, and style displays are controlled separately.

NowMenus has added the ability to pull down standard menus automatically when the pointer passes over them (like CE Software's EZ-Menus). And StartupManager can now link related extensions and define extensions as incompatible so they cannot both be turned on accidentally, and it can automatically turn off extensions that crash during start-up.

Revisions to the remaining utilities are more modest. AlarmsClock is now better-looking and easier to use. Screen Locker now offers a more detailed activity log. Profiler now lets you specify in detail what is included in the summary. MultiMaster now enables you to assign a specific sound level and color depth to each application. DeskPicture is still one of the best utilities around for replacing the desktop pattern with black-and-white or color pictures. Both MultiMaster and DeskPicture have a new look, but are largely unchanged.

On the negative side, the manual is still less than helpful. With so many ways to effect the same or similar changes (three utilities modify menus, for example, and two launch applications and open documents), Now Utilities is in grave danger of becoming needlessly complex. And I still prefer Aladdin Systems' Shortcut, Microseeds' INITPicker, and Connectix's HandOff II to Super Boomerang, StartupManager, and MultiMaster. But I should note that single-purpose utilities can cost as much as, or more than, the entire Now Utilities collection. Thus, despite its mostly minor imperfections, Now Utilities is still a bargain. For this and many other reasons, those who don't already own a comparable collection of System 7-compatible utilities should find version 3, like version 2, hard to resist.—ROBERT C. ECKHARDT

PageMaker and PostScript File Scanner

CheckList 2.0

PROS: Saves and prints reports; downloads fonts with PostScript files. **CONS:** A little buggy; scans only one file at a time. **COMPANY:** ElseWare Corporation (206/547-9623). **REQUIRES:** Mac Plus. **LIST PRICE:** \$179.95.

CHECKLIST 1.0 SHOWED YOU many things about PageMaker files, notably the fonts and graphics used in them, but it didn't let you print or save that information—just view it on screen.

CheckList 2.0 has the ability to print and save CheckList reports, plus many new features. Most important are the program's system-wide font-searching capability and the ability to look at a variety of PostScript files to determine what fonts and EPS graphics they include. CheckList isn't just for PageMaker users anymore.

The heart of CheckList is its ability to search for fonts. It can search the System file and any font suitcase you have open, search all disks with open suitcases, and even check the fonts available on a printer. CheckList then informs you of any font name and font ID conflicts, and suggests solutions.

CheckList works best with PageMaker

files. One screen lists the fonts used in a publication, where they are first used, and problems with them. CheckList even looks in the file's current APD (Aldus Printer Description) file to see what fonts are available on the target printer. The printed font report tells you if the font is used in text, in an EPS graphic, or in a PICT graphic.

Another screen (with its printed report) lists linked text and graphics in a document, whether the linked files are available, and the status of the copies (has the linked file been updated?). CheckList's Print Options window allows you to view and change all of PageMaker's print settings.

Perhaps the best new feature of CheckList 2.0 is its hierarchical display of PageMaker styles. If one style is based on another, the *child* style is displayed indented below the *parent* style.

CheckList now scans PostScript files from almost all Mac applications and from several PC applications (but not from Ventura Publisher). It lists the graphics and fonts included in the file, and warns you of font problems (fonts that you need to download, fonts not supplied or available, and bitmapped fonts).

CheckList 2.0 can also download PostScript files to a printer, and CheckList can automatically download needed fonts, in addition to adding the essential *showpage* operator to the end of EPS files.

You can add notes to a PageMaker or PostScript file (only other CheckList users can read the notes). And you can compress a PageMaker or PostScript file (even across multiple disks) with all the associated fonts, graphics, and ancillary files into a self-extracting bundle that can be decompressed by double-clicking on the file's icon.

CheckList 2.0 is not perfect. A couple of bugs have turned up—failure to find certain kinds of fonts, and memory problems (resulting in crashes) when there are too many fonts. The tabs entered in the saved-to-disk style reports make it difficult to line up the columns. You can scan only one file per window (though you can have multiple windows); you can't scan several files and report on all of them. And CheckList won't scan QuarkXPress, FreeHand, and other applications' files unless they are saved as EPS files. Version 2.01 deals with the obvious bugs (finding fonts and crashing), but for the rest, we will have to wait for the next release.

Even though CheckList is a bit overpriced, if you send PostScript or PageMaker files to a service bureau more than a dozen times a year, it's worth considering. If you work with a service bureau a couple of times a month, you'll probably recoup the program's cost in less than a year—and if you work for a service bureau, you need it now.—STEVE ROTH

CompuServe puts the whole world at your fingertips.



When you connect your computer to CompuServe, you join the world's largest international network of people with personal computers. You have access to more than a thousand services that offer a source of support, information, entertainment, communications, and benefits of all kinds.

A world of advantages.

CompuServe lets you take advantage of your personal computer in a thousand different ways.

For instance: communication. You'll get invaluable personal computer software and hardware support from other CompuServe members, as well as

product manufacturers, all over the world. Meet in special interest forums to discuss everything from science fiction to sharing software. And keep in touch through electronic mail and faxes, as well as by "talking" over 72 CB Simulator channels.

CompuServe also lets you shop coast-to-coast at hundreds of nationally known stores and take advantage of a world-class reference database. It gives you access to the latest national and international news. And our special financial files offer complete statistics on over 10,000 NYSE, AMEX, and OTC securities. You can even trade online with local discount brokers.

Global travel and world-class fun.

CompuServe also offers airline schedules, so you can check out the bargains and book your own flights on almost any airline worldwide. You can get travel news, frequent flier information, and country and travel facts. As well as listings from over 30,000 hotels.

Plus, there are games. Sports, trivia, educational, space fantasy... you can go it alone or compete against players from all over the world. Only on CompuServe can you test your wits in the only online TV-style game show with real prizes, or leave the earth entirely in one of our interactive space adventures.

Just give us a call.

To become a CompuServe member, you need a computer and a modem. We'll send you everything else, including a \$25.00 usage credit with your Membership Kit. In most places, you'll be able to go online with a local phone call.

To buy a CompuServe Membership Kit, see your nearest computer dealer. To receive our informative brochure or to order direct, call us today.

And put the whole world at *your* fingertips.

CompuServe®
800 848-8199

Educational Game

OutNumbered 1.0

PROS: Customizable problems; good graphics. **CONS:** Game and math challenges are repetitious. **COMPANY:** The Learning Company (510/792-2101). **REQUIRES:** Mac Plus; hard drive; System 6.0.2; Mac II, System 6.0.5, 2MB of RAM for color. **LIST PRICE:** \$59.95.

THE BEST LEARNING GAMES ARE good games wrapped around good curricula. The best example is *Where in the World Is Carmen Sandiego?* from Brøderbund, with play good enough to capture adults while painlessly teaching geography and how to use a world almanac. *OutNumbered*, a decent enough math program, is in some ways reminiscent of *Carmen*, but falls short of the standard.

OutNumbered's story is that a local television station has been taken over by the maniacal Master of Mischief (M of M). While it's unclear why this is a problem, the player has from 9 p.m. until midnight to track the M of M to his lair—one of the five rooms in the station. You must find him before he changes all the shows to boring programs. Along the way, you get bushwhacked by Telly, a TV-headed robot, and electroshocked by the eponymous Live-

Wire. To have to solve math problems as well is almost adding insult to injury.

The graphics are attractive. The player is represented by a cool preteen in a jacket with a turned-up collar, yellow jams, and red high-top sneakers. He carries a handy zapper, a weapon that looks something like a TV remote control with an antenna. Successfully getting through the math problems (the number and difficulty of the problems depend on your rank of play) in one room nets you one part of a four-part code that eventually leads you to the M of M. Correctly identify his hideout, and the M of M gives up so easily it seems a shame to zap him. You get bonus points for remaining time and energy, and the on-screen hero celebrates your victory with a funky little dance and a couple of flips.

The game aspects of *OutNumbered* are good but somewhat limited. You can quickly go through all the rooms, and once you've solved the problem(s) in a particular room, there's no reason to go back to it. Some of the logistical aspects can be a little awkward. You can maneuver the game character equally well with the arrow keys or the mouse. However, you must keep an eye on the direction arrow in front of your on-screen alter ego or you might find yourself marching back into an elevator you've just left, or flipping over something you meant to walk into.

The math problems are the least impressive part of the program. They are also repetitious: in one game I played the same challenge problem in the same room three times in a row. And a few word problems are worded obscurely enough to stump adults. One useful feature is that you can solve the math challenges by using the on-screen calculator, the standard numeric keys, or the keypad on an extended keyboard.

The program was originally targeted for students ages 7 through 14, but even in customized play, using all the mathematical options, the problems are much too easy. (You customize problems and drills by specifying which mathematical operators—addition, subtraction, multiplication, and division—to use, as well as the range of numbers.) The program is now recommended for the 7-to-10-year-old age group—a much better choice.

On the whole, I recommend *OutNumbered* as an alternative to pen, paper, and rote memorization to teach basic math skills. The program will probably be most effective with the bottom to middle of the targeted age range—grammar school, rather than middle school, students. The customizing options and Drill for Skill features make it possible for teachers to tailor the game to their students' needs, and School and Lab editions are available for classroom use. —LOUISE KOHL

Format-Translation Utility

EPS Exchange 1.01

PROS: Simple installation and interface; saves Aldus FreeHand illustrations in Adobe Illustrator 3.0 and Illustrator 88 formats. **CONS:** Does not export EPS headers; does not enhance FreeHand's ability to open Illustrator files; overpriced. **COMPANY:** Altsys Corporation (214/680-2060). **REQUIRES:** Mac Plus; 2MB of RAM; hard drive; Aldus FreeHand 3.0. **LIST PRICE:** \$150.

DESPITE THE ALLEGIANCE AN artist might have to a draw program, most artists acquire all the draw programs they can. For example, Adobe estimates that 70 percent of Illustrator users also use Aldus FreeHand. Though FreeHand has long been able to open Illustrator 1.1 files, it isn't equipped to open an Illustrator 88 or 3.0 file, and Illustrator doesn't know a FreeHand document from an empty disk sector.

EPS Exchange permits users of FreeHand 3.0 to save an illustration in the Illustrator 3.0 or Illustrator 88 format. Copying EPS Exchange to the Aldus folder inside the System Folder automatically appends two new options, Adobe Illustrator 3.0 and Adobe Illustrator 88, to each of

FreeHand's Save and Export dialog boxes. If you're familiar with FreeHand, you know that the Export command is used exclusively to create encapsulated PostScript (EPS) files. You might, therefore, expect these new options in the Export dialog box to create Illustrator documents with EPS headers. Alas, this is not the case. Whether you use the Adobe Illustrator 3.0 option in the Save dialog box or the one in the Export dialog box, you get the same result: an Illustrator 3.0 document with no EPS preview. In other words, EPS Exchange doesn't have anything to do with EPS.

That said, EPS Exchange translates FreeHand files to the Illustrator format with a high success rate. To test the utility, I created five types of objects that are handled differently inside FreeHand and Illustrator: stroked text, text that has been converted to editable paths, a linear gradation, a radial gradation, and text on an ellipse. For good measure, I threw in a few

process and Pantone colors. All successfully converted to their nearest Illustrator equivalents, except the Pantone color, which was separated into process colors. And because Illustrator 88 does not support composite paths (shapes with holes cut out of them), the letters with hollow interiors filled in when translated to the Illustrator 88 format. Otherwise, the translations worked beautifully. The stroked text converted to a standard text block inside a rectangular boundary. The gradations converted to blended objects masked by rectangles. The text on an ellipse converted to individual letters skewed at specific angles.

EPS Exchange might not do everything you want it to do, but it does successfully translate FreeHand documents to the Illustrator format. Still, at \$150, this 44K extension file seems outrageously overpriced. At last count, the \$600 FreeHand 3.0 offered well over 300 functions; that's \$2 per function at most. EPS Exchange boosts

FreeHand's function list by two, which comes to \$75 per function. Altsys promises that other expansion utilities are on the way, including an Illustrator-to-FreeHand translator. You might want to wait and see if Altsys plans to bundle these utilities at a lower price.

—DEKE MCCLELLAND



Successful Translations A FreeHand gradient (top) and the same gradient as it appears printed from Illustrator 3.0 (bottom) after being converted using EPS Exchange.

The Ultimate Productivity Tool.. your Voice



Winner of two consecutive MacUser Editors' Choice Awards:

"Best Input Device 1990"

"Most Significant Hardware Product 1989"

- DTP
- Graphics
- Business
- Multimedia
- CAD

Run at least 50% faster-

Control any Macintosh application by voice, using spoken commands to execute any function normally performed with your keyboard and mouse. Voice Navigator II recognizes any voice, any accent, any language. Really.

Imagine selecting tools, changing fonts and point sizes, zooming in and out, clicking buttons, filling cell ranges, sending voicemail messages, *all by spoken commands*. Now imagine programs like PageMaker, Illustrator, Word, MacDraft, Director, FileMaker Pro, Canvas - *all running at least 50% faster*.

Whether you're responding to dialog boxes, selecting menus, entering data, or controlling presentations, Voice Navigator II, with its Voice User Interface, makes your Mac faster and easier to use.

According to Robert Wiggins of MacUser Magazine, after you've used the Voice Navigator, ***"...you won't know how you lived without it."***

Call today for our demo video and see for yourself the power of voice control.

Get our Video Demo & Free \$20 Rebate!

SEE VOICE NAVIGATOR II LIVE DEMOS WITH THE ENTIRE ARTICULATE SYSTEMS PRODUCT LINE.

ONLY \$9.95 INCLUDES SHIPPING -

AND A SPECIAL BONUS TO YOU,

A FREE \$20 REBATE CERTIFICATE!

CALL TOLL FREE TO ORDER VHS VIDEO:

In USA 1-800-443-7077 VISA, MasterCard, American Express



Voice Navigator™ II
the voice user interface



Articulate Systems
the voice communication company

© 1991 Articulate Systems, Inc., 600 West Cummings Park, Suite 4500, Woburn, MA 01801 • Phone (617) 935-5656 • Fax (617) 935-0490
All Rights Reserved. The Articulate Systems logo is a trademark of Articulate Systems, Inc. All other trademarks are the property of their respective companies.

CODE MW292

Circle 22 on reader service card

Take Your Best Shot

BY DAVID POGUE

IN THE EARLY DAYS, IT WAS ONE of those hidden surprises built into the Mac by crafty Apple engineers: if you pressed a secret combination of keys, you could take a snapshot of whatever was on the screen. Curious, you'd try this so-called F-key, ⌘-shift-3, and sure enough, a MacPaint document called Screen 0 suddenly appeared on your disk. You'd just witnessed the birth of a *screen dump*, or more pleasantly, a *screen shot*. Documentation writers, trainers, and magazine authors rejoiced; screen shots aplenty began to appear in ads, manuals, and *Macworld*.

But time and change humble even the greatest F-keys, and soon Mac owners discovered that the magic keystroke didn't work in color. Or on big screens. Or across multiple monitors. Furthermore, writers and tech-types tired of launching MacPaint to erase 90 percent of that Screen 0 document just to isolate the one dialog box, menu, or icon they were trying to capture. A market niche was born: screen-capture software.

System 7

WELL, OK, TECHNICALLY, APPLE'S SYSTEM 7 (\$99) isn't a screen-capture utility. Yet it does give new life to Apple's charming built-in screen shot function. Instead of the limited 8-by-10, black-and-white MacPaint format, the new, improved ⌘-shift-3 feature generates full-color, full-size, right-side-up PICT files. And it even makes a satisfying cameraesque *kachunk* sound. Try it!

Still, ⌘-shift-3 only satisfies some of the people some of the time. You still need a graphics program to edit the results; you still have to erase unwanted parts of the image; and you still can't use the key combination when a menu is pulled down. But it'll do if you're ever stranded on a desert island with nothing but a Mac and a power outlet.

Capture 4.0

THIS CONTROL PANEL FROM MAINSTAY (\$129.95) established the conceptual model that all rivals would later follow: when you press the magic key combination, you *don't* actually create the snapshot. Instead, you get a crosshair cursor, which you can drag over any rectangular

portion of the screen. Only when you release the mouse button is your selection saved. In other words, much of the post-snapshot editing work is eliminated—in essence, you crop the shot as you take it. And you can grab pulled-down menus this way, too.

Instead of just dumping a graphics file onto a disk, Capture can also place the screen shot on the Clipboard, send it to the printer, or place it neatly in the Scrapbook without even opening it. That last idea is a gem—you can race uninterrupted through your software like a Grand Canyon tourist, snapping madly away, while the program files everything neatly in the Scrapbook behind the scenes. And Capture is the only screen grabber decent enough to display a message (if you want) letting you know that all went well.

Good as it is, though, technology has left Capture behind in several ways. First, \$129.95 is way too much to pay for such a one-trick pony. Worse, Capture's interface, though attractive, is a control panel. Every time you want to change one of its settings, you have to open Capture's control panel—which, particularly in System 7, is slower than frozen ketchup running uphill.

Screenshot 1.2.0

LEAVE IT TO 20-YEAR-OLD PROGRAMMER Mike Whittingham to come up with a better solution (Baseline Publishing, \$59.95). This time, a floating minipalettes appears when you press the trigger keys—no overnight Control Panel stay required. Using a pop-up menu, you tell your screen shot where to go: to the Clipboard, Printer, or Scrapbook, or to a disk as a PICT, Paint, or Startup Screen file. Savor the checkbox options, modeled on those of Capture: Show Cursor, Color to B&W, Change Size (of the resulting image), and so on.

Finally, you click on one of the four fat buttons—Screen, Window, Menu, or Selection—to tell Screenshot what to grab. Soon enough, you'll be paying homage on

bent knee to those canned choices—especially Menu and Window, both of which neatly eliminate the rest of the screen from the screen shot, isolating the active menu (or window) and saving you a trip to MacPaint for an erasing session. The Menu capture button can also grab pop-up menus, hierarchical submenus, and even sub-submenus.

The little touches make Screenshot especially slick: it can either name a file automatically (Excel Shot 1, for example) or prompt you for a name and folder location. It can grab only the currently pulled-down menu or include the whole menu bar. The whole thing is as smooth as silk and beautifully designed.

Exposure Pro 1.0.2

HEY, LOOK—IT'S SCREENSHOT ON STEROIDS. Same author, same company (Baseline Publishing)—just four times bulkier (336K), twice as expensive (\$139.95), and a hundred times more feature-laden. The gimmick here is that when you hit the shutter keys, the entire screen freezes into a gigantic painting, and the Exposure floating palette is your editing kit. In other words, you get to touch up the screen shot *before* it ever gets saved. You'll be weirded out the first time you grab the eraser tool and start wiping out strips of your spreadsheet. (Don't you sometimes wish spreadsheets really had an eraser tool?)

The features are pretty glamorous: a selection of cursors you can rubber-stamp onto the frozen screen image (since the real cursor does not appear); a serrated selection tool for giving truncated menus a torn-off look; a frame tool to put a neat border around the image; and text, line, and arrow tools for adding captions and call-out arrows to an image (see "Overexposed").

Sadly, most of these features fall short in the real professional world, because everything Exposure creates is a 72-dots-per-inch bitmap; the arrowheads, text captions, borders, and serrated menu

continues



*Capturing
your favorite
on-screen
moments
with screen
grabbers*

lines show jaggies if laser printed or published. Exposure is a clever idea for people who don't already own a paint program for doing touch-ups; but the interface is somewhat confused, and the whole affair is a tad bloated.

Snippet

THE YOUNG SHALL INHERIT THE MARKET: 21-year-old shareware guru Andrew Welch wrote Snippet, part of QuickTools 1.0 (Advanced Software, \$79.95). In features and look-and-feel, Snippet and Screenshot (for description, see "Screenshot" above) are practically identical. (Apparently the cross-pollination took place at Preferred Publishers, where the programs' development paths overlapped at one time or another.)

Snippet, at 58K, is slightly more compact than Screenshot, and comes as part of an eight-utility set... so toss a coin or decide whether the remaining seven QuickTools are worth the \$30 price difference.

PICTuresque 1.7

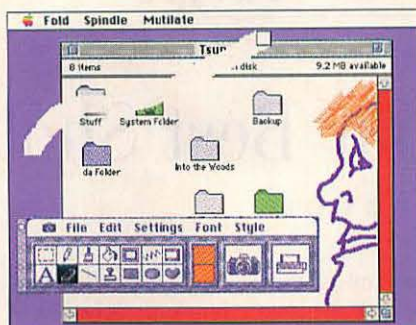
THIS PROGRAM HAS NO BUSINESS BEING here, since it is not a screen-capture program. But I found it on America Online one night, and it's super-useful. I thought maybe I'd slip it in and hope the editors wouldn't notice.

Well, it *sort of* fits the category. It's a no-frills shareware desk accessory (\$20) by 23-year-old Tim Herzog. (I don't get it. Do you have to be under 25 to write these things?) It converts encapsulated PostScript (EPS) files into a format you can paste into Word, WriteNow, or other normally EPS-hostile programs, without sacrificing any of their high-res PostScript-ness. Bet you didn't think you could do that. And hey, if you can paste EPS files into any word processor, who needs PageMaker, right?

Flash-It 2.2

HERE'S A SHAREWARE GEM THAT DOES almost everything the commercial screen grabbers do—it just doesn't look as good doing it (\$15, Nobu Toge). The interface gets a little tricky, but has advantages: using the Control Panel, you assign a *different* keystroke to each option (Send to Scrapbook, Send to Printer, and so on). There's also a separate "decide on the fly" keystroke that produces a dialog box *after* you grab an image, letting you specify the screen shot's destination.

True, Flash-It lacks that capture-just-the-menu feature that Screenshot, Snippet, and Exposure have. But you still get to send any image to the Scrapbook, Clipboard, printer, or disk file. And you even get to tell the program what *kind of*



Overexposed Exposure Pro contains a built-in paint program, so you can doctor your screen shot before you consign it to the Clipboard (or a disk file, or the Scrapbook, or the printer). You might have to avoid the temptation to go a little crazy.

disk file to create: a Canvas document, MacDraw Pro, or whatever. (Snippet does that too.) You have to study the thing for a few minutes to understand how it works—but heavens, it's only 15 bucks.

Image Grabber 2.0

CONTORTING YOUR FINGERS TO HIT \mathbb{A} -shift-whatever isn't an especially Mac-like way of making something happen. Maybe that's why Image Grabber, the only desk accessory screen capturer, feels friendlier than its F-keyed-up rivals (Sabastian Software, \$49). It couldn't be simpler: choose Image Grabber from the Apple menu, then drag the crosshairs across the region you want captured.

Of course, that scheme means you can't capture a pulled-down menu (think about it). In that instance, you can use the Timed Grab option, which gives you, say, ten seconds to get your screen the way you want it before the shutter goes off. (Remember the old Camera DA? Doesn't work anymore, but it's the same idea.) But using the Timed Grab, you can't specify what part of the screen you want. Rats. (Version 3.0, they say, will address this inconvenient arrangement.)

Snap 2.1

ANOTHER ICONOCLASTIC APPROACH: a screen grabber as an application. This polished, ingenious piece of shareware (Knowledge Source, \$17) requires MultiFinder or System 7. Choose New from the menu, and the now-familiar crosshair cursor appears; as usual, you drag-enclose the part of the screen you want.

What's *not* usual is what happens next: the screen fragment you enclose sits exactly where it was before, but now it's in a window. You can move it, print it, save it as a PICT file, or just leave it floating there for reference. You can generate scads of these image windows, just hanging open on your screen. So Snap is perfect if, say, you need to refer

to an image from one program while you write about it in another.

Otherwise, Snap isn't terribly flexible. Because it's an application, it can't shoot menus, dialog boxes, or other programs' menu bars—a whopping drawback. Why doesn't somebody come up with an F-key- or DA-based-capturer that can leave screen shots on the screen? Read on.

SnapJot 3.01

SNAPJOT IS AN F-KEY- AND DESK ACCESSORY-based capturer that can leave your screen shots on the screen. (*Et voilà.*)

You press a key combination to produce the crosshair cursor, which you drag across the screen. What's nice is that, as with the shareware Snap, SnapJot (Wildflower Software, \$59.95) leaves screen shots in individual windows. But what's even nicer is that the key combination lets you shoot menus, dialog boxes, and other programs. In fact, like Flash-It, SnapJot lets you specify a different trigger-key combo for each function: save to disk, copy to Clipboard, or print.

Half of SnapJot is a desk accessory, which you open to change your settings. The DA still isn't as convenient as a palette that pops up at the moment of truth, but it's sure faster than opening the control panel. It can also make life confusing when you have the leave-the-screen-shot-in-its-own-window option turned on, because when you use the key combination to take a shot, the DA automatically opens too, without any warning. And that can freak out the real program you're using, in which case nothing works right. (The DA might freak *you* out at first, too: it has no Close or Quit command. Eventually it dawns on you to close all the little floating windows to exit the program.)

SnapJot has none of the elegant niceties of the floating-palette programs, either, such as the one-click menu or the window-grabbing features, or the send-to-Scrapbook option. But *mmm*, boy, that leave-the-shot-in-a-window feature sure is slick.

The Upshot

FOR VALUE, TIME SAVINGS, FLEXIBILITY, surefiredness, and elegance, Screenshot takes the cake. That means its clone, Snippet, does too. If you'd rather trade the one-click menu-grab feature for the ability to leave your shots on the screen for reference, then snap up SnapJot. And start saving those cherished on-screen memories for future generations. **m**

Contributing editor and software-manual writer DAVID POGUE ran out of available function-key combinations in early 1988.

Only Publish-It!™ Easy Gives You All This! ▶

And for a Lot Less than \$300.

Publish-It! Easy, The Desktop Publisher For the Rest of Us!

In today's economy it's more important than ever to get your money's worth. That's especially true for desktop publishing software.

Priced at just \$249.95, Publish-It! Easy fits in the tightest of budgets. But that doesn't mean Easy skimps on power. All the tools needed to create dynamic looking documents are built right into the program. That means you won't have to invest in separate drawing, painting, word processing, mail merge or presentation software.

CORPORATE NETWORK VERSION AVAILABLE!

Plus Publish-It! Easy Version 2.1 has tons of goodies thrown in to make this a truly extraordinary program. For instance, thumbnail editing lets you look at your entire document, up to 100 pages at a time, and even make changes while in thumbnail mode.

Experiment all you want with your document's design, Easy's "What If" features lets you alter page elements instantly.

You can even rotate text in one-degree increments.

Plus Publish-It! Easy is an ideal choice for the Macintosh Classic, SE, Si, LC and all other Macs* since it only requires one megabyte of memory and is System 7 Savvy.

Suggested Retail Price \$249.95



TIMEWORKS

* Not compatible with Macintosh 128K or 512K machines.

Circle 206 on reader service card



Drawing & Painting Tools

All the tools needed to create a masterpiece are at your fingertips.

Easy-to-Learn Page Layout

Laying out a page has never been easier...or more fun.



File-It!

A built-in database and mail merge program. Create a database; customize a form letter without leaving Easy!



Complete Word Processing

A 112,000-Word Spell Checker and 240,000-Word Thesaurus protects you from "typo-itis".



Slide-Show Feature

Dazzle your audience with dynamic slides, handouts, even on-screen presentations.



Quick-Start Mini-Manual

Helps you create your first document in less than one hour.



72 Sample Layouts

Professionally drawn layouts give you the creative edge.

Visit your favorite dealer and ask about the **\$99 COMPETITIVE UPGRADE OFFER**. If the upgrade offer is not available, call us at 1 (800) 323-7744.

Publish-It! is a trademark of Timeworks, Inc. © 1989, 1992 Timeworks, Inc. & Foton Corp. All Rights Reserved.

See us at Macworld Expo Booth # 2529, Moscone Center

Food for the senses at a price that makes sense: \$699*

Introducing CD Gallery™: The Interactive CD-ROM System from NEC.

Is this the offer you've been hungry for? Cash in big on the sensational world of CD-ROM with seven exciting software titles for Macintosh with all the necessary hardware including the amazing NEC CDR-36 CD-ROM reader, KOSS® SA/30 amplified stereo speakers, and even stereo headphones, all for just \$699*. Or, if you want to upgrade to an NEC CDR-73, one of the fastest readers on the market, it's just \$999*. And it's all incredibly easy to set up and use. But don't chew on this offer too long because supplies are limited. Call 1-800-NEC-INFO for the nearest authorized NEC dealer to find out where you can pick up the ultimate feast for your mind.

*Manufacturer's suggested retail price, actual price may vary, call your dealer for actual pricing. Other versions available for IBM PC and 100% compatibles. © 1991 NEC Technologies, Inc. CD Gallery is a trademark of NEC Technologies, Inc. The New Grolier Electronic Encyclopedia is a trademark of Grolier Incorporated. The Software Toolworks is a registered trademark of The Software Toolworks, Inc. Time Table of History is a trademark of Xiphias, Inc. Macintosh is a registered trademark of Apple Computer, Inc.

The New Grolier Electronic Encyclopedia™/ The Time Table of History™: Science and Innovation/The Software Toolworks® World Atlas/Desert Storm: The War in the Persian Gulf/Cinderella: THE ORIGINAL FAIRY TALE/Cosmic Osmo/Ludwig Van Beethoven Symphony No. 9.

INTERACTIVE CD-ROM DISCS

Mesozoic Era (Mickey Lideo) "The Age of Reptiles"

The Time Table of History: Science and Innovation

Desert Storm: The War in the Persian Gulf

Cosmic Osmo

The Software Toolworks® World Atlas

Cinderella: THE ORIGINAL FAIRY TALE


Ludwig Van Beethoven Symphony No. 9

MultiSync 4FG

NEC

KOSS® SA/30

CD-ROM

Because  is the way you want to go.

NEC

C&C Computers and Communications

New Products

The Latest Macintosh Releases

EDITED BY EVAN COOPER

THIS SECTION COVERS
MACINTOSH
PRODUCTS FORMALLY
ANNOUNCED BUT
NOT YET EVALUATED
BY MACWORLD.
ALL PRICES
ARE SUGGESTED
RETAIL. PLEASE CALL
VENDORS FOR
INFORMATION
ON AVAILABILITY.

HARDWARE

'030 Classic Video Board

Provides 8-bit video output for Classic II's, allowing them to drive VGA or Apple 13" RGB monitor. \$699. Lifetime Memory Products, 714/969-2421, 800/233-6233.

6c OmniMedia

Flatbed 24-bit color and gray-scale scanner that scans transparent or re-



6c OmniMedia

flective materials; back-lighting arm moves with scan head to control light behind image. Supports resolutions up to 600 dpi. Ships with Adobe Photoshop. 2MB of RAM required in 24-bit mode. \$3500. XRS, 213/214-1900.

BookView Imperial

Allows Macintosh PowerBooks to connect to VGA, Apple, and NTSC monitors, and overhead projectors via an external video adapter. Plugs onto the internal system

board and adds 4MB of DRAM. Model for PowerBook 140 and 170 supports color and gray-scale devices; version for PowerBook 100 drives only monochrome devices. Includes cable for connection to VGA monitors; other cables may be purchased separately. PowerBook 140 model and 170 model \$1189; PowerBook 100 model \$959. Computer Care, 612/371-0061, 800/950-2273.

BP3670

Bubble-jet printer that produces A-, B-, and C-size output at 180 or 360 dpi. Prints six letter-size pages per minute at 180 dpi. Based on Canon bubble-jet engine. \$1995. Bézier, 408/345-0345.

Comstation Four

Hayes-compatible 9600-bps facsimile and 2400-bps data modem connects to an Ethernet or AppleTalk network to allow data or fax transmissions from any computer on a network. The incoming faxes are received in background and can be printed from server or distributed via E-mail. Software lets user customize cover sheets, store transmission log files and phone directories, schedule future transmissions, and automatically redial phone numbers. Complies with Fax Group 3 standards. \$699. PSI Integration, 408/559-8544, 800/622-1722.

EtherFlex

Interface board for Hewlett-Packard LaserJet se-



EtherFlex

ries II, IID, III, and IIID printers; board allows direct connection to Apple EtherTalk or Novell NetWare local area networks. User sets switch on board before installation to determine protocol. Installs in printer's I/O slot and supports 10Base2 and 10BaseT Ethernet connectors. Protocol module can be upgraded to support other network protocols. \$695. Extended Systems, 208/322-7575, 800/235-7576.

Executive

Portable Office

System is packaged in shock-resistant, Halibuton case; system includes a 68030-based Out-



Executive Portable Office

bound notebook computer, a Macintosh Portable, or a PowerBook 140; a Kodak portable printer; a send-and-receive fax modem; cellular phone and antenna; and optional full-page portable scanner. Outbound notebook features 60MB hard drive, 4MB of RAM, and 3.5-inch SuperDrive. Standard system weighs less than 18 lbs. \$7950; with scanner \$8990. Computers Plus, 813/277-0063.

Infolio

Pen-based computer designed to serve as electronic clipboard used to gather data for various vertical markets. Provides data-transfer framework that allows data sharing with Macintoshes, DOS PCs, and minicomputers. Main processor is a Motorola 68331 32-bit



Infolio

small systems processor. Core software kernel modules and applications reside in 1MB of ROM; computer has 1MB of RAM on PCMCIA boards and slots for up to three SRAM or ROM removable memory boards. Uses 8 AA-size rechargeable batteries for 12 hours of battery life. Uses Sharp LCD screen, available in backlit and nonbacklit versions. Company says will be priced at less than \$2000. PI Systems, 503/293-9585.

LabelEase

Produces thermal-transfer labels. Accepts graphic elements imported from the Clipboard. Software can add static text, text fields, and bar codes. Package includes Monarch 9401 or 9446 print-



LabelEase

er, with maximum label sizes of 2 inches by 9 inches and 4 inches by 9 inches, respectively. Can rotate labels and bar codes and generate summary reports of printing usage. 2MB min. memory. LabelEase-9401 \$4995; LabelEase-9446 \$5495; software only \$2995. Irie Computer, 313/665-5115.

MacWatt

NuBus accelerator board for the Macintosh II family based on an Intel i860 processor that increases floating-point capacity. Available with clock speeds of 25MHz, 33MHz, and 40MHz. Peak performance is over 80 MFLOPS, company claims. Board uses dedicated communications processor to control NuBus I/O, can carry up to 16MB of DRAM, and has expansion slots for additional processors or special I/O and graphics module. Developers must write driver to take advantage of the MacWatt's speed. 25MHz with 4MB of DRAM \$6100; 40MHz with 16MB of DRAM \$10,400. Division Limited, Quarry Rd., Chipping Sodbury, Bristol, United Kingdom, BS17 6AX.

MagicNet

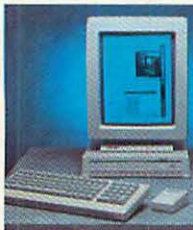
Local area network hub that operates at 10Mbps per second and supports any device with Ethernet board. Hubs are available in four- and eight-port configurations; each hub supports up to 30 devices. Network devices are daisy-chained using thin coaxial cable and are connected to Assistant Network Manager, a device that connects to a hub using voice-grade telephone wire. Managers can be located up to 400 feet from hub. Four-port hub \$475; eight-port hub \$895; Assistant Network Manager \$99. Tutankhamon Electronics, 510/682-6510.



MagicNet

MicroMac Plus Upgrade System

Adds support for large-screen displays, SCSI connection for internal hard drive, and integrated expansion slot. Modular enclosure includes fan-cooled, autoswitching power supply and company's ZeroSlot video board; optional internal hard drives available. Installation manual guides buyer through repackaging process, or company will repack for \$50. \$725; with a 14-inch VGA monochrome monitor \$895; with a 15-inch monochrome monitor \$995. MicroMac Technology, 714/363-9915.



MicroMac Plus
Upgrade System

Notebook Video Board

Family of boards for Macintosh PowerBooks that provide monochrome output for the 100 and 8-bit video output for the 140 and 170. Boards can drive Apple 13" RGB monitor, VGA monitor, or LCD overhead projector, and can have 2MB of video RAM. Model for 100 has 2MB of DRAM; model for 140 and 170 has 4MB of DRAM. \$699. Lifetime Memory Products, 714/969-2421, 800/233-6233.

OptiStor 650

Rewritable magneto-optical disk subsystem with storage capacity of 650MB per removable continues

cartridge. SCSI device uses Sony drive system, and has data-transfer rate of 900K per second with burst rate of 1.2MB per second. Requires company's \$95 software adapter kit for use with Mac. \$4180. Unbound, 714/843-1895, 800/862-6863.

Optoscan Integral Pro

Autofocus overhead 24-bit color/gray-scale scanner with up to 5000 by 7200 resolution and built-in light table. Scans 3-D objects and reflective and transparent documents. Ships with SpectreDriver, SpectreScan, and SpectrePrint Pro software. Scanner can convert RGB scan to CYMK on the fly. \$33,990. Pre-Press Technologies, 619/931-2695.

Pocket Fax Modem

A 6-ounce fax modem that sends and receives data and faxes at 9600 bps and supports V.42bis data compression and V.42 error correction. Powered by 9-volt battery or AC adapter. Includes QuickLink II for Mac



Pocket Fax Modem

software. \$399. MiCC, 408/980-9565.

PowerMemory

Family of expandable RAM boards that can increase total memory to 8MB on Macintosh PowerBooks. Available in 2MB fixed RAM and 2MB or 4MB flexible RAM configurations. Flexible RAM boards have additional socket to which any fixed RAM board can be added. 2MB fixed RAM \$399; 2MB flexible RAM \$499; 4MB flexible RAM \$999. PSI Integration, 408/559-8544, 800/622-1722.

QBlazer

A transportable V.32, 38,400-bps modem with V.42 error correction and V.42bis data compression. 2.3-by-2.4-by-2.4-inch modem operates

using 9-volt battery or AC adapter. Includes coupon to purchase MicroPhone II for \$99. \$745. Telebit Corp., 408/734-4333, 800/835-3248.



QBlazer

QuadFlextra

Very high density floppy (VHDF) subsystem; reads and writes 21.4MB disks; offers an average seek time of 35ms and an average data-transfer rate of 1.25MB per second. External SCSI drive uses the company's Twin Tier Tracking system to ensure data integrity. Disks under lifetime warranty. Exter-



QuadFlextra

nal drive and four disks \$895; additional disks \$25 each. Quadram, 404/932-6666.

QX/4232bis

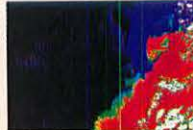
Modem using MNP Class 10 error-correction and V.32bis standard enabling modulation up to 14,400 bps. Effective throughput is 38,400 bps using V.42bis data compression. \$999. Microcom, 617/551-1000, 800/822-8224.



QX/4232bis

SatView

System that allows Macintoshes to receive real-time weather and surface-temperature images from polar-orbiting weather satellites. Package consists of Mac-controlled wideband radio receiver, SatView software, and



SatView

NuBus board. Software controls receiver, and stores and manipulates received images that may be saved as PICT files. Anyone with system can access data from satellites free of charge. Requires Mac II, 2MB min. memory. \$3950. Marisys, 407/272-3490.

Spectra Star 440

A thermal-wax transfer color printer that includes internal 32MB hard drive for print spooling and font storage. PostScript-compatible printer offers resolution of 300 dpi. Higher-capacity drives also available on special order. \$7995. General Parametrics, 510/524-3950.

Studio 5

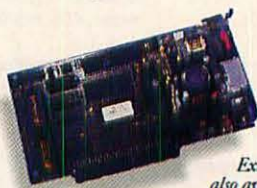
MIDI interface, processor, synchronizer, and patch bay with microprocessor; provides RAM storage for

up to 128 patches. Lets computer communicate independently with 15 MIDI ins and outs; adds filtering, channelization, and note-range splitting; converts SMPTE time code into MIDI time code; and reads and writes SMPTE time code in all formats. Supports 240 MIDI channels and can create unlimited number of virtual instruments. Bundled with Opcode MIDI System plus software for studio integration. 1MB min. memory. \$1295. Opcode Systems, 415/369-8131.

Tefax RA2136

Fax machine that acts as a Macintosh peripheral device and has automatic paper cutter. Device's telephone/fax switch recognizes incoming faxes and phone calls and routes them to Tefax, phone, or answering machine (not included). Faxes can be printed on Tefax, saved to a hard drive, or both. Transmits at up to 9600 bps; also operates as 200-dpi scanner with AutoFax software. Soft-

DoveFax™ LAN saves you time every step of the way.



External version
also available.

Fax machines were originally designed to save time. Not waste it. That's why Dove created the DoveFax LAN. It allows multiple users to fax worldwide over a network server. No standing in line. Documents are converted to fax format at your Mac®. The network picks up the file and sends it in the background at 9,600 bps via an undedicated server. Users benefit from powerful software features such as scheduling, distribution lists, auto retry, and group send. Plus each user can customize cover pages, personalize phone books, and monitor an individual activity log. The DoveFax LAN includes a lifetime limited hardware warranty.

1200 N. 23rd St., Wilmington, NC 28405
919/763-7918, Sales 800/788-DOVE,
Int'l 919/343-5600, Fax 919/251-9441



All product names referenced are the servicemark, trademark, or registered trademark of their respective holders. © 1991 Dove Computer Corporation.

Circle 138 on reader service card.

ware allows user to edit received faxes, schedule transmissions, and automatically generate fax cover page. \$1495. Relisys, 408/945-9000.

SOFTWARE

Animation Clips: Business Volumes I & II

Two collections of animations in PICS format for corporate presentations; clips feature business objects and metaphors that can be customized. Images support any multimedia authoring package that can import PICS files. Each volume contains 30 animations in black-and-white line art or 8-bit color; optional sound file available with each animation. Min. memory depends on



Animation Clips: Business Volumes I & II

authoring package used. \$99 to \$149, depending on options. Media In Motion, 415/621-0707, 800/395-2547.

AutoDoubler

Performs file compression automatically and transparently, and can access files and run applications that are in compressed format. User specifies percentage of disk space needed available at any given time, and program automatically compresses files of user-specified age when computer is idle. Fault-tolerant compression technology aids utility in localizing and repairing damaged data in the event of disk crash. Icons of compressed files can be marked for visual identification. 1MB min. memory. \$79.95. Salient Software, 415/321-5375.

Corporate Intelligence

Electronic news-retrieval system that gathers data from CitiCorp's Global Reports news service and stores information in a networked database. Updates business

data on user-defined schedule. Database contains company profiles, industry news, general business news, and stock market exchange summaries. 1MB min. memory. Ten-user pack \$2500; additional users \$75 each. MediaWorks, 408/356-0620.

DataClub Elite

File-server software that supports more than 200 users and can combine multiple dedicated servers to appear as one server on client desktops. Off-loads all Finder operations to client workstation to increase speed. Supports mixed environment of machines operating on System 6.X and System 7. 4MB min. memory. \$1395. International Business Software, 408/522-8000, 800/733-2822.

designPower

Application for use with Claris CAD that has parametric, or what-if design tools, allowing user to manipulate the shape, dimensions, and action of an existing

model. Other features include relational layers, object linking, and animation and simulation capabilities. Program's Geometric Resolver insures that designs conform to user's specifications. Package includes library of parametric symbols of doors and windows for use in architectural design. Also supports MacDraw II, MacDraw Pro, and DFX. 2MB min. memory. \$399. Vision Software, 408/748-8411, 800/800-8476.

Expanded Books

Collection of books on disk designed to be read on Macintosh PowerBooks. Instead of scrolling, user clicks on buttons to navigate pages, which can be searched and marked. Sizable margins provide space for note taking. First three titles to be released are *The Complete Hitchhiker's Guide to the Galaxy*, by Douglas Adams, *Jurassic Park*, by Michael Crichton, and *Martin Gardner's The Annotated Alice* and *The More Annotated Alice*. Company plans to

release new titles each month. 1MB min. memory. \$19.95 each. The Voyager Company, 213/451-1383.

FrameReader

Software that allows user to print, read, and distribute FrameMaker documents on Unix and Mac platforms. Includes navigation tools for use with hypertext created in FrameMaker and has multiple zoom levels. Creates links to files for instantly updated images. 1MB min. memory. \$125. Frame Technology, 408/433-3311.

LinksWare

Creates permanent links to text and graphics files using standard document types such as Microsoft Word, WriteNow, and RTF. User double-clicks on a selected word or graphic and then opens the file to be linked to create document for use with run-time version of program. 2MB min. memory. \$189. LinksWare Corporation, 408/626-4177, 800/879-5465, orders only.

MacGlobe

Electronic atlas of the world with profiles of 190 countries and dependencies. The atlas includes maps, graphics, and data for each country; data can be compared using bar charts or thematic maps. Maps and graphics can be exported as PICT files. Shows flags and plays national anthems. Updates of data available annually. 1MB min. memory. \$79.95. PC Globe, 602/730-9000, 800/255-2789.



MacGlobe

MacMICA

A real-time interactive conferencing application for use over AppleTalk networks. Allows users to annotate and highlight visual information using shared conference window. Program includes file-transfer mechanism and folders for file storage; uses Finder's Clip-continues

*Integrate Your Data, Fax
and Voice with DoveFax™+*

Simplify!

It's a communications jungle out there. That's why Dove created DoveFax+. By integrating data, fax and voice technologies into a single device, DoveFax+ turns your Mac® into a powerful communications workstation. It gives you the tools you need to communicate with the rest of the world...without the extra hassles.

DoveFax+ and your Mac. How simple can it get? Also look for the World Class Award winning DoveFax without voice messaging support. All DoveFax products include a lifetime limited hardware warranty.



Internal version also available

D A T A

► 2,400 bps Hayes® compatible data modem

F A X

- 9,600 bps send and receive fax modem
- Full background operation
- Fax without accessing Chooser
- Scheduling, distribution lists and group send

V O I C E

- Auto-answer fax or voice calls
- Record personalized phone messages
- Remote retrieves and forwards messages
- Unlimited message length



1200 N. 23rd St., Wilmington, NC 28405
919/763-7918, Sales 800/788-DOVE,
Int'l 919/343-5600, Fax 919/251-9441

All product names referenced are the servicemark, trademark, or registered trademark of their respective holders.
© 1991 Dove Computer Corporation.

Circle 128 on reader service card.



with PowerDraw, accepted worldwide as the professional 2D CAD standard for the Macintosh. Fast. Intuitive. Elegant.

See us at Macworld Expo
Booth # 1239
Moscone Center

PowerDraw™
By Engineered Software

For free brochure, call Engineered Software. 1-919-299-4843.
In Canada, call Evoy & Associates. 1-204-453-8111.

Circle 12 on reader service card.

BACKUP DESIGNED WITH RAMONA IN MIND.

Ramona's our mother. But even she won't use our software unless it's fast and simple. So we designed DiskFit Pro to back up a Macintosh hard disk with just a few mouse clicks.

The first time you use it, DiskFit Pro creates a SmartSet™—an exact copy of your hard disk. The next time you use it, DiskFit Pro copies and updates only the latest files, keeping your SmartSet clean and tidy. DiskFit Pro even prompts you to back up—just like a mom.

If you're too busy to spend hours learning a backup program, we think you'll like DiskFit Pro as much as Ramona does.

DISKFIT PRO™

To Go Forward, You Must Backup

AVAILABLE AT RETAILERS AND MAIL ORDER OUTLETS WORLDWIDE

Dantz

DANTZ DEVELOPMENT CORPORATION

1400 Shattuck Avenue, Suite 1, Berkeley, CA 94709 • 510/849-0293 • 510/849-1708 FAX

Circle 26 on reader service card.

board to move images from other applications into conference window. 1MB min. memory. Single license \$349; five-user license \$1030; ten-user license \$1490. IIS Technologies, 416/890-2773, 800/263-9673.

Monopoly for Mac

Computerized version of board game by Parker Brothers. Up to eight players, human or computer, move their game pieces around a color replica of a Monopoly board. 1MB min. memory. \$49.99. Virgin Games, 714/833-8710.

Photo Animator

Creates animations that can be played back in word processors, in HyperCard 2.0, and in the Scrapbook. Storyboard layout shows full animation sequences. Animation frames are created using program's color paint tools. Floating palettes include a customizable color palette. Features multiple-level zooms and automatic scrolling. System 7-compatible. Requires Mac II and System 6.0.7. 1MB min. memory. \$179.95. Zeus Data Systems, 719/522-0649.

PlanMaker

Program that helps user prepare, formulate, and publish business plan for presentation when soliciting investment funds. Application is written in HyperCard and includes



PlanMaker

three complete business plans and several financial forecasts to study. Various modules prompt user for information necessary to complete plan. Plan may include up to ten sections, including executive summary, pricing and profitability, and market analysis. 2MB min. memory. \$129 plus \$3 s/h. PowerSolutions for Business, 314/421-0670, 800/955-3337.

Scrabble Deluxe

Computerized version of Scrabble board game that contains 100,000 Official Scrabble Players Dictionary within program. Players can enter new words and definitions in user dictionary. Game allows four human players; computerized opponent has nine skill levels. Black-and-white and color versions available. 2MB min. memory. \$49.99. Virgin Games, 714/833-8710.

Splat'ers

Three-dimensional action game that pits player against up to 15 computer opponents. Players are armed with pistols that fire balls of paint at opponents. Options include capture-the-flag-type games and strategy games. Must run in 16-bit color. Requires Mac II. 1MB min. memory. \$69.95. Bullseye Software, 702/831-2523.

Stuffit SpaceMaker

Control Panel device that automatically compresses any file on the fly or after user-defined idle time. User marks files for compression by adding preset keyword to file name. Can be operated from Finder or any application. Compressed file automatically expands when opened and recompresses when closed. 2MB min. memory. \$59.95. Aladdin Systems, 408/761-6200.

TrashMaster

Automatically empties files dragged to Trash under System 7. Adds menu to Finder's Empty Trash command that lists all files currently in the Trash. Can be scheduled to empty Trash at regular intervals or on user-specified system events. Incinerator function erases files when Trash is emptied and conforms to Department of Defense specifications. 1MB min. memory. \$59. The HandOff Corp., 214/727-2329.

CD ROMS

MaxImages A2

Collection of over 340MB of digital images for use in desktop publishing. Each image provided in 24-bit, 8-bit, and gray-continues

Your Mac can say a lot about you.

If somebody sat down at your Mac and started snooping around your disk, which would embarrass you more?

The details of your love life? Your resume? Your adjusted gross income?

How about the Confidential Employee Evaluation you were working on when the Boss hauled you into his office for a chat?

What? You never thought about this before? Then read on and you'll never have to think about it again.

All you'll have to think about is your password.

That's the key to DiskLock™, the painless, yet powerful, System 7 savvy way to keep other people's noses permanently out of both your personal and professional data.

You can password-protect selected files, folders or your entire hard disk. And encrypt everything to U.S. Government DES specs.

You don't even have to be there. DiskLock blanks your screen and secures your system for you — without interrupting your applications — whenever you wander off.

When you return, it asks for your password and lets you know if anyone got curious while you were away.

If you're curious about DiskLock, or about our one-year money-back guarantee, call 1-800-477-8212.

We'll give you all the juicy details.



FIFTH GENERATION SYSTEMS, INC

Circle 135 on reader service card

Dearest Ellen:

If there is anything better than being loved by you...it is loving you.

And you are so easy to love. You've brought such wonder into my life and have touched my heart with your love.

I just want you to know, my darling, that it feels so good being in love with you and I want to love you for a very long time.

You are a wonderful woman and I love you dearly. If I'm dreaming, please don't wake me up—I don't want this to end.

Monogamously yours,

Dear Kate Letter

October 22, 1991

Normal

FROM: Scott (11/14/91)
TO: Chris
CC:
BCC:

Subject: PERSONAL

Time: 1:24 PM

Date: 11/14/91

OFFICE MEMO

During a recent dinner at Chairman Binkenhimer's home, you stated that members of the Daughters of the American Revolution are "a bunch of old battle-axes."

Judging from the fact that you made this comment within earshot of the Chairman, you must not be aware that Mrs. B. is a founding member of the local D.A.R. chapter and holds the rank of Brigadier General.

Employee Evaluation

EMPLOYEE NAME	EMPLOYEE #	DEPARTMENT
ANTHONY HALSTEIN	223	Administration

PERFORMANCE OF RESPONSIBILITIES: Mr. Halstein distinguished himself as a reliable administrator. Because Mr. Halstein's position, this was considered unacceptable.

INTRA-OFFICE RELATIONS: Mr. Halstein distinguished himself as a reliable administrator. Because Mr. Halstein's position, this was considered unacceptable.

CHARACTER ISSUES: Mr. Halstein distinguished himself as a reliable administrator. Because Mr. Halstein's position, this was considered unacceptable.

OTHER COMMENTS: Details of your wrath at the Chairman's restaurant.

RECOMMENDATIONS: Terminate.

1040

Department U.S. In

For the or other Your

Label (See instructions on page 8.)

Use IRS label. Otherwise, please print or type.

Presidential Election Campaign (See page 9.)

Filing Status

Check only one box.

Exemptions (See instructions on page 10.)

RESUME

CHRISTOPHER S. KEENAN

CHRIS Party Inviter

CELEBRATE!

I got a new job, LET'S PARTY!

Date: November 3

Time: 8PM

Place: Chris' Place
123 Unemployment Lane
555-1212

RSVP

And remember, don't tell anyone else at the office!!!

**YOU COULD HAVE TURNED \$30,209.25
INTO \$3,515,783.17 IN 6 5/6 YEARS.**

Type	Purchase	Quant	Purch	Comm	Cost	Sell	Sell	Comm	Today's	
						Date	Price	/Sell	Value	%/L
Call	03/28/04	100	\$3.50		230,299.25	03/27/04	24.25	1226.25	142,299.75	312,664.50
Call	03/29/04	100	\$3.50		230,300.00	03/27/04	24.25	1226.25	142,299.75	312,664.50
Pute	03/12/04	100	\$2.88		229,929.25	03/19/04	14.00	18.75	239,781.25	320,822.00
Call	03/12/04	100	\$2.88		229,929.25	03/20/04	14.00	18.75	239,781.25	320,822.00
Call	06/26/08	100	\$2.38		229,929.25	07/03/08	23.13		231,604.25	37,981.50
Pute	07/18/05	100	\$3.00		229,929.25	07/20/05	23.13		231,604.25	37,981.50
Call	04/13/05	100	\$3.25		229,929.25	06/28/05	22.75		227,250.75	(35,416.50)
Pute	09/16/05	100	\$3.25		229,929.25	09/26/05	22.75		227,250.75	32,863.50
Call	09/16/05	100	\$3.25		229,929.25	12/18/05	24.25		142,625.00	114,671.00
Call	03/27/06	100	\$3.25		229,929.25	03/27/06	24.25		142,625.00	376,416.50
Call	03/12/06	100	\$4.75		229,929.25	03/12/06	24.25		142,625.00	376,416.50
Call	05/21/06	100	\$4.50		223,375.00	06/01/06	24.75		191,108.75	251,876.00
Call	06/06/06	100	\$4.50		223,375.00	06/06/06	24.75		191,108.75	251,876.00
Pute	09/17/06	100	\$4.50		223,375.00	09/20/06	26.88		266,445.00	223,311.25
Call	11/25/06	100	\$4.13		222,825.00	11/25/06	24.88		146,425.00	277,433.50
Call	04/12/07	100	\$4.13		222,825.00	04/12/07	24.88		146,425.00	277,433.50
Call	03/06/07	100	\$6.75		231,251.25	03/06/07	24.88		190,750.00	229,242.50
Call	03/06/07	100	\$6.75		231,251.25	03/06/07	24.88		190,750.00	229,242.50
Call	03/20/07	100	\$4.75		224,125.00	03/20/07	24.25		182,163.75	234,432.50
Call	03/20/07	100	\$4.75		224,125.00	03/20/07	24.25		182,163.75	234,432.50
Pute	08/19/07	100	\$4.88		224,000.00	08/20/07	27.50		274,676.25	226,481.25
Call	06/17/07	100	\$4.25		226,250.00	06/17/07	24.25		182,163.75	239,427.50
Call	07/16/07	100	\$4.25		226,250.00	07/16/07	24.25		182,163.75	239,427.50
Call	08/10/07	100	\$5.88		239,625.00	08/26/07	35.00		336,390.00	277,566.50
Call	09/09/07	100	\$5.88		239,625.00	09/09/07	35.00		336,390.00	277,566.50
Pute	10/08/07	100	\$7.75		247,500.00	10/29/07	31.88		372,242.50	388,949.37
Call	11/10/07	100	\$7.75		247,500.00	11/10/07	31.88		372,242.50	388,949.37
Call	11/13/07	100	\$3.38		235,375.00	11/13/07	24.38		182,540.75	(31,663.00)
Call	03/13/08	100	\$3.38		235,375.00	03/13/08	24.38		182,540.75	(31,663.00)
Call	02/17/08	100	\$5.88		239,625.00	02/27/08	39.63		459,932.50	353,113.50
Pute	03/26/08	100	\$5.88		239,625.00	03/26/08	39.63		459,932.50	353,113.50
Call	06/16/08	100	\$4.25		226,250.00	06/16/08	24.25		182,163.75	239,427.50
Call	06/26/08	100	\$4.25		226,250.00	06/26/08	24.25		182,163.75	239,427.50
Call	06/01/08	100	\$4.25		226,250.00	06/01/08	24.25		182,163.75	239,427.50
Pute	06/10/08	100	\$4.00		226,250.00	06/10/08	24.25		182,163.75	239,427.50
Call	06/10/08	100	\$4.00		226,250.00	06/10/08	24.25		182,163.75	239,427.50
Call	10/16/08	100	\$5.50		232,500.00	10/16/08	29.50		364,616.25	239,352.50
Call	01/09/09	100	\$7.13		243,750.00	01/09/09	32.62		391,361.25	297,998.75
Call	02/17/09	100	\$7.13		243,750.00	02/17/09	32.62		391,361.25	297,998.75
Pute	02/23/09	100	\$3.75		231,251.25	02/23/09	22.25		146,505.00	316,793.75
Call	02/23/09	100	\$3.75		231,251.25	02/23/09	22.25		146,505.00	316,793.75
Call	03/19/09	100	\$6.38		239,625.00	03/19/09	30.63		421,606.25	336,036.75
Call	03/19/09	100	\$6.38		239,625.00	03/19/09	30.63		421,606.25	336,036.75
Call	07/08/09	100	\$5.75		231,251.25	07/08/09	24.14		182,540.75	(31,663.00)
Call	08/24/09	100	\$3.63		226,250.00	08/24/09	24.14		182,540.75	(31,663.00)
Call	08/24/09	100	\$3.63		226,250.00	08/24/09	24.14		182,540.75	(31,663.00)
Call	12/29/09	100	\$4.13		222,825.00	12/29/09	24.88		146,425.00	277,433.50
Call	01/09/10	100	\$4.13		222,825.00	01/09/10	24.88		146,425.00	277,433.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/18/10	100	\$6.75		231,251.25	03/18/10	24.88		190,750.00	229,242.50
Call	03/1									

76.19% Accurate: Above is a chart of OEX trades from December 28, 1984 to October 16, 1991, based on the signals generated by the Right Time-Index Program™. By following the signals generated by the program, the rules in the manual and starting with just a small amount of capital (\$30,209.25) your profits would have been over \$3,500,000.00.

COMPUTERIZED TRADING FOR THE REST OF US.

The Right Time™ computerized trading system was developed by an expert portfolio manager for his own personal use. Over the last ten years of **in-market** use the software has been perfected and made easy to use. Now it's available for any smart trader who wants to make quick profits from quick decisions. Just look at the profits generated in the above chart!

Not only is **The Right Time™** the best decision support system ever devised for traders, it's the only software that analyzes volume/price, support/demand, and global market trends – all at the same time.

AMAZINGLY PRECISE.

The Right Time™ programs run on IBM (and compatible), Apple II and Macintosh personal computers. The software is easy to use, amazingly precise, and very, very clear in its signals.

You can retrieve and update signals for your stocks, commodities, indices or funds from Dow Jones, Warner, Signal, DBC or the Radio Exchange (depending on the program) in less than five minutes per day. What's more, you can play "What If" games and have results in about one second.

RESULTS: WINNING TRADES.

There are nine **Right Time™** programs available to help you make the right decisions at the right time.

- **Stock Program & Stock Program/Long Term:**
"The program is amazing. Profitable trades have developed out of nowhere!" M.C., Stockbroker.

● **Index Program & Index Program/Long Term:** "Computer whiz finds program for success. This program really works." A G columnist

● **Futures Program:** "Very profitable with four out of five winners. Paid for itself the first trade." B.L., investment advisor.

● **Mutual Funds Program:** "Accurately picked my last seven profitable trades. I couldn't trade without it." L.S., individual investor.

● Day Trading Program/Index, Futures or Stock: "The Day Trading Programs are sensational." P.S., investor.

FOR MORE INFORMATION.

Call (800) 800-5642 or write for our free twenty page brochure. To place an order call (800) 755-TBSP. Each end-of-day program costs \$599 plus shipping and handling (S&H). Combination discounts are available.

Demonstration programs are available for \$59 each, plus S&H. Each demo includes our complete manual.

Our Right Time - Day Trading Programs (Index, Futures or Stock) are priced at \$999 each, plus S&H. Combination discounts are available.

T.B.S.P. INC.

The Better Software People

610 Newport Center Dr., Suite 1120

Newport Beach, CA 92660
(714) 734-8888 Fax: (714) 734-8885

Hours: 8 am - 5 pm M-F Pacific Time

All programs not available for all computers.

100

scale TIFF formats. Includes demo version of Adobe Photoshop 2.0. \$269. TechScan, 805/985-4370.

Royalty-Free Sound and Image Series

Collections of royalty-free sounds and images to be used in multimedia presentations. Sound clips are in AIFF, SoundDesign, and SoundEdit formats; images are in 24-bit TIFF and 8-bit PICT format. Volumes include Russia/China and South Pacific/Tropical/California Coast. Contains Multimedia Library Browser for accessing contents. \$199. The Multimedia Library, 212/777-2908, 800/654-3242.

VG Shaders + VG Looks

Contains 17 photo-realistic surfaces for use with Pixar's Showplace and MacRenderMan. Volume 1 includes Tortoiseshell, Tweed Fabric, and Wood Veneer surfaces. Volumes 2 and 3 designed for architectural uses. Surfaces are applied to objects in Showplace or MacRenderMan and can be altered for varying effects. Volume 1 \$495; Volumes 2 and 3 \$345 each. The Valis Group, 510/236-4124.

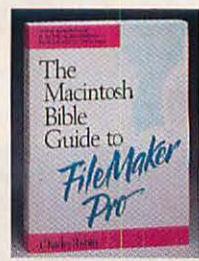


VG Shaders + VG Looks

BOOKS

The Macintosh Bible Guide to FileMaker Pro

Book on the popular database program details



The Macintosh Bible
Guide to FileMaker Pro

Macintosh Companion

Book for beginning Macintosh users that starts with basics of setting up computer and advances to coverage of System 7, MultiFinder, and PostScript. Written by Sharon Zardetto Aker and illustrated by Berke Breathed. \$22.95. Addison-Wesley Publishing, 617/944-3700.

Upgrading and Repairing Your Macintosh

Provides overview of the Mac and its hardware, operating system, and graphical user interface. Gives readers techniques for diagnosing and correcting problems and teaches how to determine whether problems are hardware- or software-related. Sections focus on connecting peripherals, networking a Mac, and using diagnostic tools included in Mac system. Written by Doug High. M&T Books, 415/366-3600.

ACCESSORIES

Incliner

Computer workstation that adjusts to various heights, allowing user to work from variety of seats, including recliners, sofas, and office chairs. Gas cylinders help support work surface during adjustment; casters allow unit to be moved easily. \$299. Task Force, 803/788-8093. **m**

To have your product considered for inclusion in *New Products*, send an announcement with product name, description, minimum memory, peripherals required, pricing, company name, and phone number (and two copies of software) to: *New Products Editor*, *Macworld*, 501 Second St., San Francisco, CA 94107. *Macworld* reserves the right to edit all product announcements.

Do You Make These Six Common Mistakes On Your Taxes?

Six common mistakes can cause you big headaches on your taxes. An oversight here, an omission there. From unnecessary tax payments to full blown IRS audits -- you can end up paying too much ... or worse.

But now, using MacInTax® and your personal computer, you can avoid these simple but costly mistakes:

1 The Arithmetic Error

Today, even the simplest forms contain complex calculations. And with all the late-night scrambling, an innocent mistake could cost you plenty.

2 The Transcription Error

With all those numbers being juggled from schedule to schedule, it's no wonder the figures are so often transcribed incorrectly or entered on the wrong line.

3 The Omitted Form

Even "ordinary" returns require anywhere from six to a dozen forms to complete. It's easy to miss one ... or end up rushing all over town to find the one you need.

4 The Misinterpreted Instruction

At best, IRS instructions can be tough to understand. At worst they can be mind-boggling. What you need are clear directions in plain English.

5 The Overlooked Deduction

You'd have to be a professional tax preparer to know all the deductions you're entitled to. If you miss just one, it could cost you hundreds of dollars.

6 The Exceeded Guideline

The fastest way to trigger an IRS audit is to exceed the "normal" range on one of your deductions. You need to know what the IRS looks for on a line-by-line basis.

When you do your taxes with MacInTax, mistakes like these are virtually impossible. And filing your taxes couldn't be easier.



America's #1 Tax Software

MacInTax is America's #1 best-selling Macintosh tax preparation software -- no others come close! With MacInTax on your Macintosh, you can completely and accurately prepare your income taxes in just a few hours.

Here's how easy it is!

- A. Gather your records and receipts.
- B. Enter your data into MacInTax just once.
- C. Print out, sign and drop in the mail.

MacInTax does the rest. MacInTax asks you step-by-step questions and shows you how to enter

every item. And like a good tax advisor, MacInTax helps you identify every deduction you can claim.

Then MacInTax makes all the calculations, checks for accuracy and consistency, and transfers every number to the proper lines on the proper forms. And, MacInTax prints every form you need in IRS-approved format right on your own printer -- ready to sign and mail (or file electronically, if you prefer, for a faster refund).

Macworld Magazine says "... the most successful special-purpose program yet for the Macintosh ..." Try it for yourself. Free. We know that if you try it, you'll never go back to doing your taxes the old-fashioned way again. So we'll send you MacInTax on an unconditional free trial basis: *If you don't like it, you don't pay for it!*

Free Bonus!

Plus, when you buy MacInTax, we'll send you a FREE copy of Norton Utilities as a special bonus gift. Norton Utilities (regular \$179) is America's best-selling disk repair and data recovery program. With over 40 different types of error checking, it performs the most extensive diagnosis and repair of any utility program for the Macintosh. And it's yours free when you buy MacInTax.



Norton Utilities

☐ Yes, I'll try MacInTax FREE!

Rush me a FREE trial copy of MacInTax ASAP (I pay just \$8.50 shipping now). I'll try it free for 30 days, and if I don't like it for any reason, I'll just send it back and owe nothing (shipping fee is non-refundable). If I do keep it, I'll be charged \$79.00 (\$20.00 off the regular price) after my 30-day free trial.

FREE BONUS: Your free copy of Norton Utilities (reg \$179) will be sent upon full payment.

Name _____
 Address _____
 City _____ State _____ Zip _____
 Bill My: ☐ Visa ☐ MasterCard ☐ Discover ☐ Amex
 Card # _____ Exp. Date _____
 Signature _____

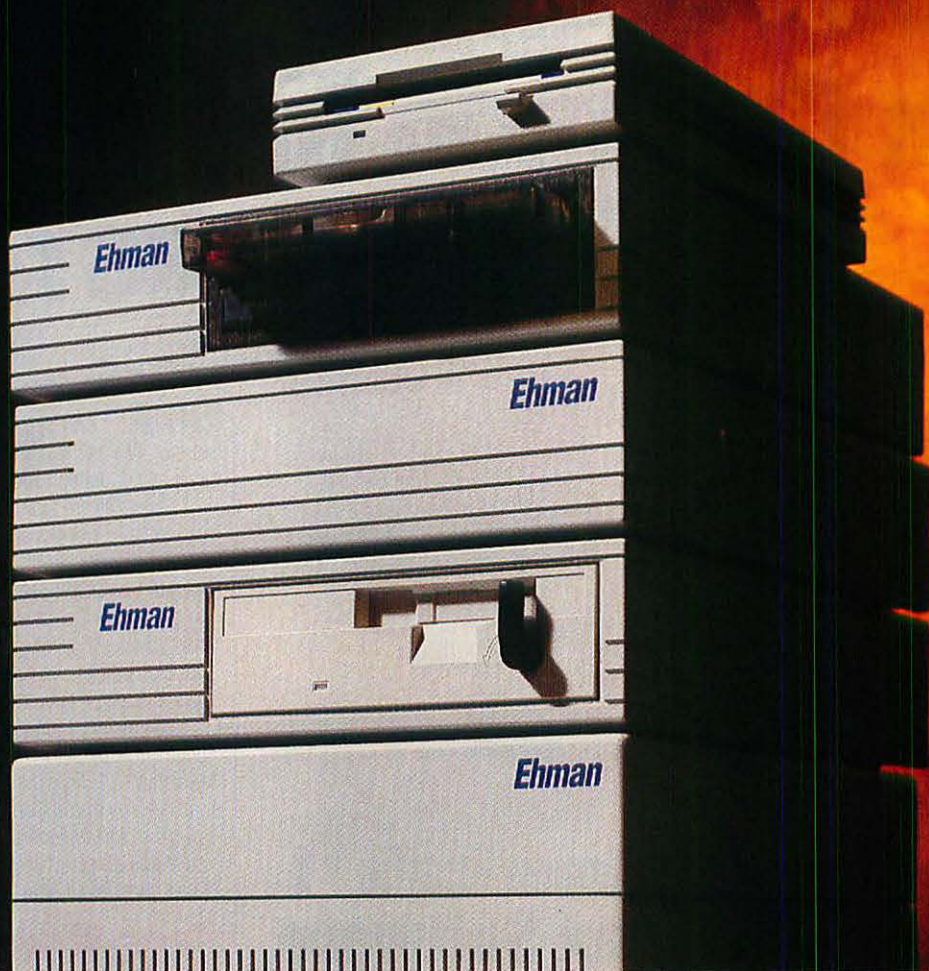
SPECIAL OFFER

Pay now in full and we'll send both Norton and MacInTax right away -- and we'll pay the shipping!
☐ Yes, charge my credit card in full now. (\$79.00)
☐ Yes, check enclosed (payable to "ChipSoft")

Mail your order to: ChipSoft, Box 85709
 Or Call NOW: San Diego, CA 92186-5709

800-487-8297 Ext. 755

MacInTax requires Macintosh Plus, System 4.2 or higher and hard drive. California residents please add 7.25% sales tax. Offer expires 4/15/92 -- not valid with any other offer. Offer also includes free HandStart Edition for orders received through 12/31/91. MacInTax® is a registered trademark of ChipSoft CA, Corp.



Mass appeal.

If you find very high quality mass storage at very low prices to be very appealing, you've found the right ad.

Because that's what Ehman drives are all about.

All 35 of them.

Internal and external. Half height and full. Hard, floppy and tape. From 880K to 660MB.

Each drive is tested twice and subjected to a final 24-hour system burn-in. And each is filled with features you'd normally associate with hefty price tags.

Like whisper-quiet fans for unheard of noise levels. Dual-fuse

circuitry that gives you a second layer of protection from power surges. Fifty-pin cables for easier daisy-chaining. And access times as low as 10ms.

Our new 160MB tape drive can transfer an entire cassette worth of data in as little as 23 minutes.

Which makes it worthwhile for backing up hard disks.

We back up each of ours with a two-year warranty. A 30-day money-back guarantee that lets you back out, no questions asked.

And the kind of technical support that generates stacks of mail from delighted customers.

You'll be delighted to discover that the 88MB

removable hard drive stacked second from the top is yours for the rock-bottom price of \$695.

While the very popular 45MB drive just below that is yours for a paltry \$299.

And that includes your choice of free software: *MacTree Plus* or *Disk Doubler*.

If all this appeals to you, call us today. Odds are, your new Ehman drive will be on its way to you tonight.

Now that's what you call mass movement.

Ehman

Call 1-800-257-1666 • Fax 1-307-789-4656

\$299
45MB
EXTERNAL
\$695
88MB
REMOVABLE



Each Ehman drive includes a coupon for your choice of free software: *MacTree Plus* or *Disk Doubler*.

Questions and Tips from Macworld Readers

BY LON POOLE

WHAT REALLY PREVENTS a Mac Plus, SE, or Classic from using System 7's virtual memory capability—the 68000 processor or the ROM? You may wonder after reading my response to "Memory Limits" in November's column. True, the 68000 lacks the memory-management unit needed for virtual memory, as Christopher Davis replied via Internet, but in the final analysis the ROM is the real culprit. You could upgrade a Plus, an SE, or a Classic by installing an accelerator containing a 68030, which includes a memory-management unit, but System 7's virtual memory still would not work.

Hidden Free Beep and Color Map

Like Michael Banks of Coppell, Texas, you may not have found the bonus beep sound and the color world map that a November tip promised would be in the System 7 Scrapbook. They exist in the Scrapbook file on Apple's System 7 distribution disks, but the Installer ignores that file if your System Folder already contains a Scrapbook file when you upgrade to System 7. To get at the sound and the map, temporarily move the Scrapbook file from your System Folder to the desktop. Next, copy the Scrapbook file from the System 7 distribution disk to your System Folder. Then open the Scrapbook, scroll to the sound, copy it, open the Sound control panel, and paste. Also, scroll in the Scrapbook to the color world map, copy it, open the Map control panel, and paste. Finally, select the Scrapbook file on the desktop, choose Put Away from the Finder's File menu, and click OK when the Finder asks if it's OK to replace the Scrapbook file in the System Folder with the one you're moving (putting away) from the desktop.

Resetting Page Setup

Q The Page Setup command's Page Orientation option is always set to Portrait (tall) for a new document. I would like to change this standard setting to

Landscape (wide) so I can automate an Excel macro to plot and print my charts. Could I do this with a resource editor? Currently I have to set Page Orientation to Landscape by hand for every chart before printing.

*Dilip Dudgaonkar
Slidell, Louisiana*

A Excel 3.0 lets you set all Page Setup options with the macro command **Page.Setup** (see the Excel function reference manual for details). If you weren't using a macro to automate chart creation, you could perpetuate your custom chart settings by opening copies of a template chart you made in advance. To make the template, create a new chart, change the Page Setup settings (and other settings) as you like, and save it as a template by clicking the Options button in the Save dialog box and choosing Template from the File Format pop-up menu.

IBM Monitors with LC

Q I own a Macintosh LC and am considering purchasing a larger monitor. I recall reading somewhere that, with the addition of an inexpensive cable, the LC can run IBM monitors. Is this correct, and if so, what type of cable would I use?

*Jason Lang
Guilford, Connecticut*

A The LC can be connected with a special cable to a VGA monitor made for IBM PC-compatible computers. You get the same picture size and number of colors as with a Macintosh 13-inch color monitor. Many companies make VGA monitors; prices vary and so does image quality. Before buying, try to view the VGA monitor you're considering next to a Macintosh monitor. If the computer store where you're shopping can set up this comparison, they can probably sell you the cable you need as well. BMUG

(510/549-2684) sells a \$25 VGA adapter and a \$15 adapter kit (requires soldering). You can also build a cable from scratch (see "LC to VGA").

Recycling Old Software

Q After obtaining a major upgrade to software, is it a violation of the license agreement to give the old version of the software to someone for use on another computer? The new software has a different serial number and its own registration card. Also, there was considerable cost (more than \$100) for the upgrade. I have looked at the license agreement and cannot see that major updates are covered.

*Alan T. Baker
Elmira, New York*

A Because I am not a lawyer I cannot offer advice to you on whether you can legally transfer a software license under any particular circumstances. License agreements vary from one software company to another; one company may even have different agreements for different products. In the final analysis, you must read your own license agreements and make your own decisions (end of weasel clauses).

I will say that reading 16 publishers' license agreements in my software library turned up very few that specifically forbid transferring an old version to someone else. Farallon and Quark prohibit any transfer of their software license, period. Aldus lets you transfer the software but says "... any transfer must include the update and all prior versions ..." The other 13 say nothing about upgrades or updates but do explicitly permit transferring the software. When you transfer, you must commonly hand over all disks, manuals, and the license agreement to the recipient. The scope of this re-

continues



*Recycling old
software,
accelerating
Photoshop,
ending
scrunched
envelopes, and
more*

MacLabelPro. The Best Just Got Better!

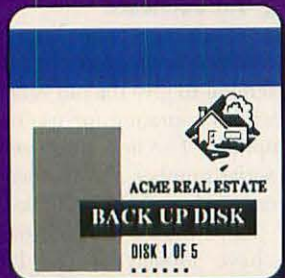
NEW!
**Postal Bar Code, Desk
Accessory & Clip Art
from 3G Graphics!**

1.



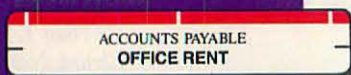
Postal Bar Code...

2.



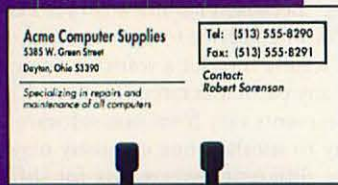
Diskette Labels...

3.

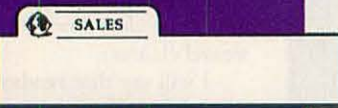


File Folder Labels...

4.

Card Products...
Rotary Cards, Index Cards, Post Cards,
Name Tags with plastic holders.

5.



Custom Tab Dividers...

MACLABELPROTM Software

MacLabelPro features include:

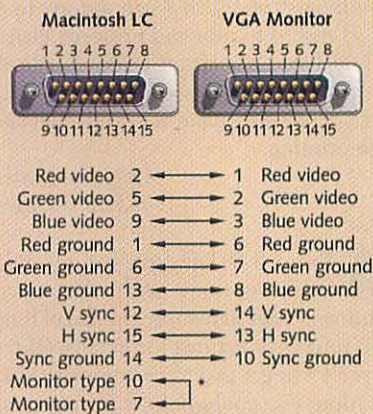
- Preset formats for Avery Laser and Dot Matrix Labels
- Easy mail merge
- Sophisticated tool palette (drawing, graphic sizing, text rotation)
- Postal bar code capability
- Desk accessory for quick labels
- Professional clip art from 3G Graphics

Call 1-800-541-5507 for a dealer near you or upgrade information. Retail price only \$99.95



LC to VGA

Connecting a Mac LC to a VGA graphics monitor (made for DOS PCs) with a cable that follows this official Apple wiring diagram gives you 640-by-480 color graphics. (If you're a real techie, you can build the cable yourself.) The number of colors depends on the amount of VRAM installed in the LC—16 colors with the minimum 256K of VRAM or 256 colors with the 512K VRAM SIMM installed.



* Connect pins 7 and 10 of the LC connector so the LC knows it's connected to a VGA Monitor.

Also, I have 32-bit addressing turned off in the Memory control panel. I thought this meant I would have only 8MB available under System 7. However, About This Macintosh reports that Total Memory is 10,240K, and summing the amounts of RAM in use and available seems to bear this out.

What's going on?

Steven Gilmore
San Antonio, Texas

A When 32-bit addressing is off, System 7 can access at most 8MB of RAM. If more is installed, System 7 accounts for the unused excess by blithely adding it to the system software partition shown in the About This Macintosh window. If you turn on 32-bit addressing, your system software will drop back down to about 1250K, giving you another 2048K to open programs. Within minutes you may also experience an inglorious system crash if you are using software that isn't 32-bit clean, a great deal of which still exists.

No Peeking

TIP: The two HyperCard scripts listed in November's *Quick Tips* do prevent users of the stack containing the script from peeking at button locations when pressing ⌘-option (or field locations when pressing ⌘-shift-option), but all that scripting is unnecessary in HyperCard 2.0 and later versions. Instead, just set the Protect Stack command's Can't Peek option. Alternatively, you can type the following line in the Message box or include it in an openStack handler in the stack script:

set the cantPeek of this stack to true

If you do use November's scripts, you should add `pass idle` on a new line before `end idle` and add `pass mouseWithin` on a new line before `end mouseWithin`. These additions make sure the messages get passed along to other scripts in the HyperCard message hierarchy.

Brian Blood
Richardson, Texas

Accelerating Photoshop

TIP: Here is a technique for speeding up image manipulation on huge (30MB to 100MB) Photoshop documents. Open the document and use the marquee to select a small area in which you need to make some changes. Copy the selection, create a new document (its default size and mode are the same as the Clipboard image's), and paste into the new document. You can manipulate the image in the smaller document much faster than in the large document. When you finish

continues

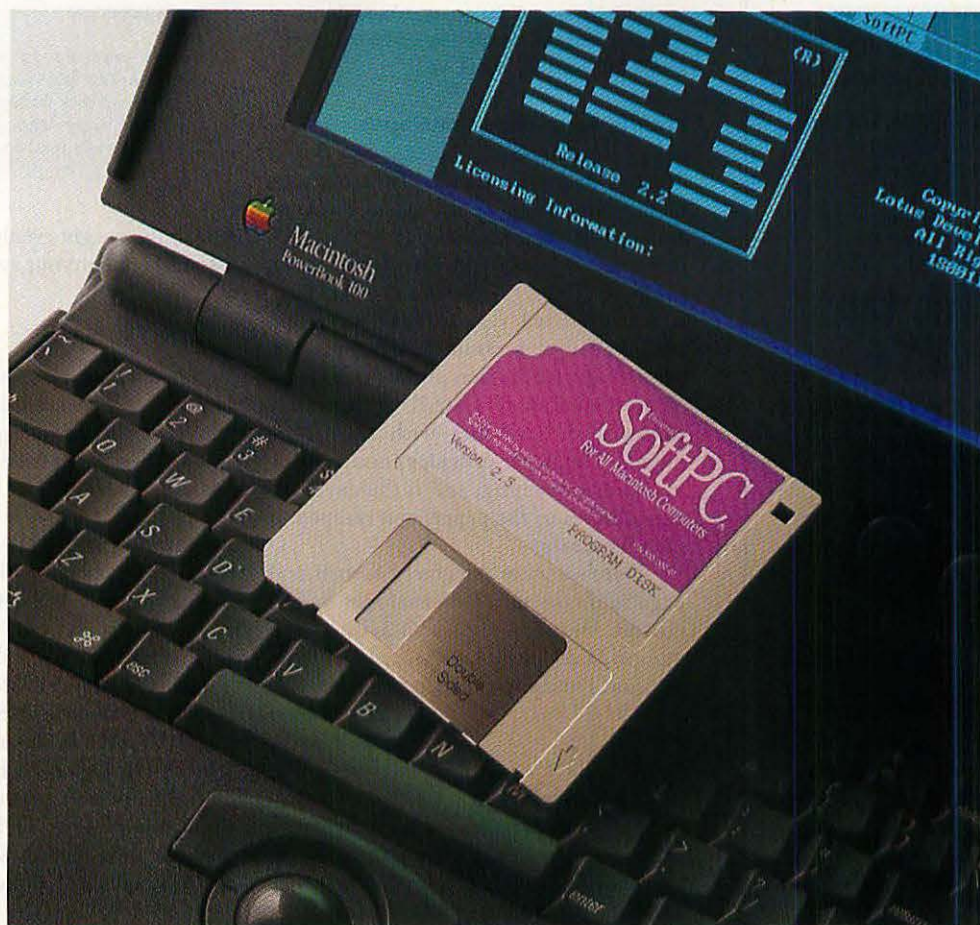
quirement is open to interpretation.

Software publishers probably expect you to discard old versions when you upgrade, or if the new version isn't compatible with documents created by the old version, to keep the old version for use with your old documents. "The best rule to remember is that the upgrade is considered to be an improvement to the original copy and does not create a new license. So according to the copyright law, you cannot give away or sell older versions of software products that have been upgraded," says Alene Rosenthal, general counsel for the Software Publishers' Association (SPA). The SPA also recommends you erase (and reuse) or destroy disused disks from old versions rather than simply tossing them out with the old manuals. Otherwise a scavenger might retrieve the old version, use it, and even audaciously contact the publisher for technical assistance or an upgrade.

RAM Mystery

Q When my Mac LC had 2MB of RAM, the Finder's About This Macintosh command (in System 7) reported that system software consumed about 1250K. After upgrading memory to 10MB, I found that system software consumes over 3200K. It's the same software configuration, so why does adding 8MB of RAM also add 2MB to the System's memory usage?

Why Your Next IBM Computer Should Be A Macintosh.



SoftPC makes your Mac an IBM compatible. With SoftPC, the new Macintosh computers are more than just powerful and portable. They are also the most compatible computers available. Now

they can run a whole world of MS-DOS software. Because SoftPC® from Insignia Solutions lets you run any MS-DOS program on a Macintosh. Even over a Novell PC network.

Insignia Solutions™
Bridging Worlds Of Software™

And SoftPC works on any Mac, from the Plus to the new Powerbooks and Quadras.

It's simple. Just load SoftPC and an IBM window appears on the screen. There's no hardware installation required. It's like having two computers in one.

If you don't believe it can be that simple, call us at (800)

848-7677. We'll answer all of your questions, and show you how your next IBM computer could be Macintosh.

INSIGNIA SOLUTIONS INC., 526 CLYDE AVENUE, MOUNTAIN VIEW, CA 94043 FAX: (415) 964-5434 CALL: (415) 694-7600

SoftPC is completely compatible with Apple's System 7 software. SoftPC is a registered trademark of Insignia Solutions Inc. All other product names are trademarks or registered trademarks of their respective holders.

Circle 72 on reader service card

BAR CODES OR LABELS?

MacBARCODA



THE BIG COST SAVER IN THE PRINT, PACKAGING & PUBLISHING INDUSTRY

- Used in 35 countries, MacBARCODA is a suite of easy-to-use DA's producing bar codes in EPSF
- Compatible with all the popular page-makeup packages (Freehand®, Xpress®, Illustrator®, PageMaker® etc...)
- UPC, Code39, ITF, EAN, ISSN and ISBN
- Full control over magnification, truncation and bar width reduction
- Automatic check digit verification
- No messing with fonts or film
- All the vital features necessary for quality bar code production.

and NOW, the COMPLETE labeling solution



NOTHING COMPARES... LABEL DESIGNER GIVES YOU:

- Mailing labels • Shipping labels
- BRCs • Inventory labels
- Product labels • Bar Code labels



Multi-variational text



Serial No.
100001

ComputaLabel

ComputaLabel Inc., 28 Green St. Newbury MA 01951
Tel 800-289-0993 Fax 508-462-9198

working in the smaller document, select it all, go back to the original document, and paste. Voilà! It replaces the original selection pixel for pixel. The time savings are tremendous.

If you want to close the original document while working on the small document, you must save the selection as a path before closing. Then when you re-open the original document, you can re-select the saved path before pasting from the small document.

Jeff Satterwhite
Greensboro, North Carolina

To save the selection path in Photoshop version 1.X, use the Selection->Alpha command and then save the document. To restore the selection, use the Alpha->Selection command.—L.P.

Ending Scrunched Envelopes

TIP: To print single envelopes through a LaserWriter without taking advantage of the printer's Auto Scrunch 'n' Seal capabilities, you simply put a letter-size sheet of quality paper (nothing wimpy) between the envelope's adhesive-coated flap and the envelope body. Feed this combination into the printer against the side of the intake tray. (Note that LaserWriter II users cannot center-feed envelopes with this technique.) The paper provides enough body to avoid scrunching, and if the envelope flap adheres to the paper, you can peel it off very easily.

Here's a great document format and page setup for side-fed envelopes in Microsoft Word: a 9-pica (1.5-inch) top margin, a 25-pica (4.167-inch) left margin, and Landscape orientation.

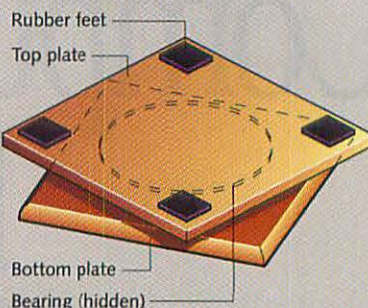
Tim Murray
Alpharetta, Georgia

Cheap Swivel Base

TIP: With parts from a hardware store and no tools, you can make an inexpensive swivel base for a Macintosh and any equipment stacked under it or atop it. The unit doesn't tilt, but it only raises the Mac about .75 inch and is almost invisible when in place. The parts you need include a lazy-Susan assembly (rotating bearing with metal plates) and eight rubber stick-on furniture feet. A 6-inch lazy Susan, fine for a compact Mac, and eight rubber feet cost me \$4.70 at a local hardware store. If you have a larger Mac, you can use an 8-, 10-, or 12-inch lazy Susan and additional feet to support the extra weight.

To make the swivel, simply stick the feet at the four corners of the lazy-Susan assembly, both top and bottom (see "Please Pass the Mac"). If you have a large lazy Susan, stick on additional feet to dis-

Please Pass the Mac



Make a swivel base for your compact Mac from a 6-inch lazy-Susan assembly (with bearing) and stick-on feet from a hardware store. For larger Macs, use a larger lazy Susan and more stick-on feet.

tribute the weight evenly. Then center the assembly under your system.

Mark D. Vermette
Austin, Texas

The rubber feet provide clearance between the lazy Susan's metal plate and the cooling vents underneath some Macintosh models. Be sure the feet rest on a solid part of the Macintosh's case, and not on a louvered vent.—L.P.

Reclaiming MS-DOS Disks

TIP: Would you like to use preformatted MS-DOS disks as Mac disks? Prior to System 7 you had to format them first, using a utility such as SUM Tools' QuickCopy. With System 7, all you do is insert the MS-DOS disk in the internal FDHD SuperDrive, and when asked if you want to initialize the disk, click the Initialize button. (Note: this does not work with an 800K external floppy drive or with the 800K drive installed in the Mac Plus and in older Mac SEs.)

David T. Ramos
Canfield, Ohio

The button is named Initialize only if you insert a 1440K (high-density) MS-DOS disk. If you insert an 800K MS-DOS disk the buttons are named One-sided and Two-sided.—L.P.

LaserWriter Hoaxes

TIP: I've concluded that "laser labels" and "Apple Toner Cartridges" are big hoaxes. For three years I have used Hewlett-Packard toner cartridges in my LaserWriter IINT with no ill effects and a savings of \$20 to \$30 per cartridge. HP LaserJet II and III (but not IIP) cartridges fit LaserWriter II printers. Apparently, continues

"Fastest overall printer..."

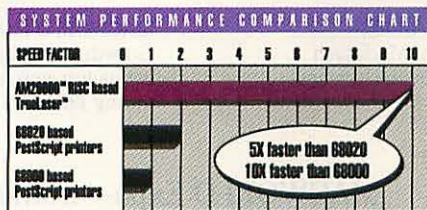
InfoWorld PostScript Printer comparison, June 10, 1991.



Now just \$1995.

The Power of RISC.

TrueLaser uses the powerful AMD 29000, 32-bit RISC processor. This powerful micro-processor gives TrueLaser the ability to process your graphics and text files many times faster than conventional PostScript



printers. In addition, TrueLaser is specially optimized for greater speed when using Microsoft Windows, reducing your wait time and increasing your productivity.

TrueType and PostScript Fonts.

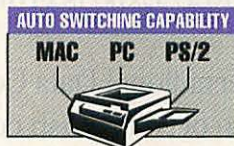
TrueLaser comes bundled with 35 TrueType fonts, Apple's new font standard, which gives you high quality output in even the smallest point sizes. TrueLaser is also compatible with all of Adobe's Type 1 and Type 3 fonts.

Affordable New Price.

TrueLaser gives you everything you need to produce stunning text and graphics output in half the time, along with a 1 year warranty that includes 6 months of on-site service.

Versatile.

TrueLaser works in just about any computing environment—Macintosh, IBM PC, or PS/2. It comes standard with the three most popular interfaces: AppleTalk, Centronics, and RS-232C. And because TrueLaser includes built-in automatic interface switching, sharing the TrueLaser is a snap.



For added versatility, TrueLaser also provides HP PCL compatibility. Call 1-800-654-4160 or 213-321-2121 for the name of the Microtek dealer nearest you.



MICROTEK
Better Images Through Innovation.

•Microtek Lab, Inc., 680 Knox Street, Torrance, CA 90502, (213) 321-2121 (800) 654-4160. •Microtek International Inc., No. 6 Industry East Road 3, Science-Based Industrial Park, Hsinchu Taiwan, 30077, R.O.C., 886-35-772155
•Microtek Electronics Europe, GmbH, Schiefstraße 72, D-4000 Düsseldorf 11, F.R. Germany, 49-211-526070 • © 1990 Microtek Lab, Inc. All rights reserved. TrueLaser is a trademark of Microtek International, Inc. Windows and OS/2 are trademarks of Microsoft Corporation. TrueType, Macintosh and AppleTalk are trademarks of Apple Computer, Inc. IBM is a trademark of International Business Machines Corporation. PostScript is a trademark of Adobe Systems, Inc. Centronics is a trademark of Centronics Data Computer Corporation. All other trademarks or registered trademarks are the property of their respective holders.

Where In The World



MACWORLD EXPO/VIENNA
Growth in number of Macintosh computers purchased in Austria during 1990: 62%



MACWORLD EXPO/HELSINKI
Growth in number of Macintosh computers purchased in Finland during 1990: 67%



MACWORLD EXPO/ASIA
Growth in number of Macintosh computers purchased in Hong Kong during 1990: 37%



MACWORLD EXPO/EUROPE
Growth in number of Macintosh computers purchased in The Netherlands during 1990: 56%



MACWORLD EXPO/BERLIN
Growth in number of Macintosh computers purchased in Germany during 1990: 66%



MACWORLD EXPO/NEW ZEALAND
Growth in number of Macintosh computers purchased in New Zealand during 1990: 38%

The Macintosh market continues to explode. And MACWORLD Expo is growing right along with it.

According to International Data Corporation, the installed base of Macintosh computers has skyrocketed 800% to 4.4 million units since 1985. And that number is expected to almost triple by 1994.*

At the same time, MACWORLD Expo has gone from a single show in 1985 to 17 international expos today.

The fact is, no matter where in the world you find computer users, you'll find

MACWORLD Expo—from Auckland to Amsterdam, Sydney to San Francisco, Toronto to Tokyo, Boston to Birmingham.

MACWORLD Expo brings together the people and the companies who are

going places. Some come to share tips and techniques.

Others to exchange

ideas and innovations. Everyone to see, touch, try, and buy the latest in Macintosh products and services.

For information about exhibiting at the most successful trade show series in the world, please complete the attached coupon

Everywhere.

* SOURCE: International Data Corporation, August 1990.

Is Macworld Expo?



MACWORLD EXPO/BARCELONA
Growth in number of Macintosh computers purchased in Spain during 1990: 94%



MACWORLD EXPO/FRANCE
Growth in number of Macintosh computers purchased in France during 1990: 73%



MACWORLD EXPO/STOCKHOLM
Growth in number of Macintosh computers purchased in Sweden during 1990: 73%



MACWORLD EXPO/TOKYO
Growth in number of Macintosh computers purchased in Japan during 1990: 36%



MACWORLD EXPO/AUSTRALIA
Growth in number of Macintosh computers purchased in Australia during 1990: 22%



MACWORLD EXPO/BIRMINGHAM
Growth in number of Macintosh computers purchased in the U.K. during 1990: 53%

and mail it to: **MACWORLD Expo**, c/o World Expo Corporation, P.O. Box 9107, 111 Speen Street, Framingham, MA 01701.

Can't wait? Fax it to us at 508-875-1573.

Don't miss out on this opportunity to exhibit at **MACWORLD Expo**—the original Macintosh computer show. It's everywhere.



We'll send you a world of information.

☐ I'd like to know more about *exhibiting* at the MACWORLD Expos checked below.

☐ I'd like to know more about *attending* the MACWORLD Expos checked below.

- ☐ Amsterdam
- ☐ Auckland
- ☐ Barcelona
- ☐ Berlin
- ☐ Birmingham
- ☐ Boston

- ☐ Helsinki
- ☐ Hong Kong
- ☐ Mexico
- ☐ Milan
- ☐ New York
- ☐ Oslo

- ☐ Paris
- ☐ San Francisco
- ☐ Stockholm
- ☐ Sydney
- ☐ Tokyo
- ☐ Toronto

All MACWORLD Expos are independent trade shows produced by World Expo Corporation, an International Data Group company, the world's leader in information services on information technology. Macintosh and Mac are trademarks of Apple Computer, Inc.

MACWORLD EXPOSITION

NAME _____

TITLE _____

ORGANIZATION _____

STREET _____

CITY/TOWN _____ STATE/PROVINCE _____

POSTAL CODE/ZIP _____ COUNTRY _____

TELEPHONE _____ FAX _____

MW292

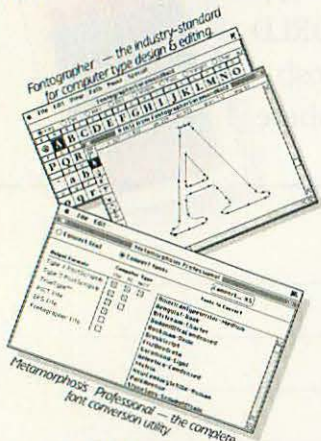
See us at Macworld Expo Booth # 1931

What's the Difference between a Font and a Typeface?

...And what's all this about PostScript® versus TrueType®? Is there a difference between tracking and kerning? What is an outline font, anyway?

At Altsys, we've spent the last 6+ years understanding and developing Macintosh® software for creating and editing type and fonts. And during that time, a special vocabulary has developed just for computer type. It's made up of new words and different uses of traditional typographical terms.

So, to help you understand fonts in this age of technology, we'd like to offer you a free copy of our booklet, **Type Terminology on the Desktop**. Just call us at the phone number and extension below or use the enclosed magazine reader reply card.



Remember, "When you need more than a pretty face, we're just your type!"

Altsys Corporation
269 W. Renner Road
Richardson, Texas 75080
Phone: (214) 680-2060, Ext. 687
Fax: (214) 680-0537

ALTSYS

Scaled Text along a Path

When you scale a logo or something else that involves text along a path, FreeHand 3.0 scales everything except the text on the path (left). To have the text scaled as well (right), Sue Ann Sanders of Oak Creek, Wisconsin, suggests you group the items including the text, set the Group Transforms as a Unit option with the Element Info command, and then scale.



LaserJet I and LaserWriter/LaserWriter Plus cartridges are identical, although I haven't tried them.

For the same three years I have been using non-"laser" labels in my laser printer. I buy Quill brand, 4-inch-by-3-inch continuous fanfold labels and tear them into two- or four-label strips. These strips can be manually fed into a LaserWriter printer or stuffed into an envelope cassette—the cassette lid bulges a bit, but it works. (Ironically, the envelope cassette doesn't work with my number-10 envelopes, which must be hand-fed.) I know this is supposed to cause roller rot, toner trauma, and loss of fertility, but it hasn't; and I've never had a label peel off or jam. In my PR business, I go through several thousand labels a year, printed individually in batches of several hundred.

Gordon Sell
Montclair, New Jersey

I use conventional 4-inch-by-3-inch self-adhesive labels that come 2 per sheet in packages of 80 labels, Avery S6448 or Dennison 43-558. The following printers all use the Canon SX print engine and have interchangeable toner cartridges: Apple LaserWriter II (all models), HP LaserJet II and III, and QMS-PS 815 and 825. The following printers use a different Canon engine, the LX, and their cartridges are interchangeable: Apple Personal LaserWriter LS and NT, HP LaserJet IIP, and QMS-PS 410. And printers that use the Canon CX engine—LaserWriter, LaserWriter Plus, HP LaserJet I, and QMS-PS 810—also have interchangeable cartridges. Readers, if you have used alternative toner for your LaserWriter—toner refills in particular—please let me know your experience. (Sorry, no tip payments for these contributions.) I will summarize the results in a future issue.—L.P.

We Couldn't Restart Because...

TIP: A couple of months ago our Mac IIcx bombed, and we couldn't restart it from its internal hard drive or from a System Tools 6.0.4 disk that worked on another Mac. We carried the IIcx, keyboard, and mouse to our dealer for a "complete" diagnostic. In the dealer's lab our computer started up immediately from its internal hard drive, but back in our office the Mac wouldn't start up. The technician had no explanation except "It must be your software." We experimented and finally discovered the defect was not in the software at all—it was in the mouse. The dealer had not used our keyboard or mouse and never realized our ADB mouse was confusing the system. We substituted a new mouse, and the IIcx beeped back to full consciousness. If your Mac won't start up, don't assume it is a hard drive crash. It may be just a mouse squish.

Charlie Lebeda
Morris Plains, New Jersey

We pay from \$25 to \$100 for tips published here. Send tips or questions (include your address and phone number) to *Quick Tips*, Macworld, 501 Second St., San Francisco, CA 94107. Send electronic mail to CompuServe (70370,702) or MCI Mail (294-8078). All published submissions become the property of Macworld. Due to the high volume of mail received, we're unable to provide personal responses. **m**

LON POOLE answers readers' questions and selects their tips for this monthly column. His two most recent books are *Amazing Mac Facts* (Microsoft Press, 1991), a collection of the best published tips; and *Macworld Guide to System 7* (IDG Books Worldwide, 1991).

Bringing NewLife to a New World...



499.00

16 MHz SE*

16 MHz CLASSIC*

599.00

- Do the demands of the latest applications and system software tax your SE or Classic?
- Does System 7 add a new definition of "Wait State" to your compact Macintosh system?

NewLife has the solution.

With a NewLife *Accelerator!*[™] installed in your Macintosh SE or Classic, even the most demanding software won't slow you down – windows snap open at a click of the mouse, complex documents and graphics scroll effortlessly, and intricate spreadsheets update in an instant.

Designed from the ground up for System 7 compatibility, the NewLife *Accelerator!* delivers 32 bit power.

Features

- Boosts performance to over twice that of Classic II
- Fully compatible with System 7
- Significantly improves StyleWriter speed and performance
- Optional video adapter
- Optional "VIRTUAL 3.0" from Connectix
- 2 year limited warranty

CALL US FOR MORE INFORMATION

1-800-663-6395

or 613-592-5080

fax: 613-592-9738

P.S. Also ask us about NewLife products for the Mac Plus/512KE.

NewLife

Computer Corporation

603 March Road

Kanata, Ontario, Canada

K2K 2M5

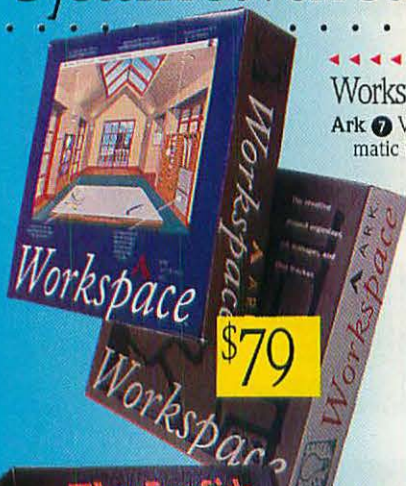
Experience the Performance

*Prices include 68882 math co-processor. Prices and specifications subject to change without notice. NewLife is a trademark of NewLife Computer Corporation. Other brand and product names are trademarks of their respective holders. ©1991, NewLife Computer Corporation. All Rights Reserved.

Circle 294 on reader service card

"System seven software; super service."—Mac

Call 1-800-367-4222 US & Canada • Visa/MC/AMEX accepted



\$79

Workspace

Ark 7 Visual project organizer, document manager and automatic time tracker that will simplify working on your Mac. Access all your applications and projects from one place! Multiple rooms let you select from three offices, with more offices available in the future.

Bernoulli Transportable 90 Meg

IOmega 70 IOmega, long known for reliability, now offers fast, 19 millisecond access time, and affordable removable storage with a 5-year warranty. Durable in design and built for speed.



\$788



\$48

Far Side Calendar

Amaze! Inc 7 Your favorite Far Side characters make random on-screen appearances, but this light-hearted organizer does more than entertain. Features a cartoon a day, day/week/month/year at a glance, audio alarm and more.

DayMaker

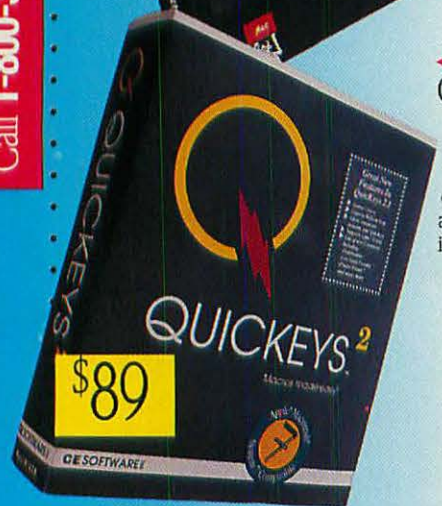
Pastel Development 70 Get all your personal information together with DayMaker. Information tools include advanced schedule and to-do list management, categories, priorities, alarms, tickler reminders, address books, phone dialing, Gantt charts, import/export, and calendar output to Filofax pages



\$65

QuicKeys 2.1

CE Software 70 The System 7 savvy version of the leading macro product for the Macintosh. In addition to being fully 32-bit clean and offering Balloon Help, QuicKeys 2 can "drive" applications that support Apple® Events through its Apple Events Extensions.



\$89

More After Dark & After Dark/M.A.D. Bundle

Berkeley Systems 7 Over 25 incredible new displays for After Dark, including Berkeley contest winners Mowin' Man, GraphStat, and Tunnel, plus many beautiful new fish. Includes Virex-D® virus detector module from Microcom. Requires After Dark (order the bundle and save!).



\$26/41

ColorPage T16 Trinitron

E-Machines 70 An affordable full-page 16-inch display with 72 dpi resolution. Features Sony Trinitron technology for sharp, high quality picture. Uses the built-in video on the new Mac Quadra/040. MacUser five-mouser for three years in a row. Ask about rebates!



See Listings

Painter/Wacom Tablet

Fractal/Wacom 70 Personal Publishing's painting product of the year! Painter delivers real natural media effects, brushes, pens, chalks, and paper grains (22 included). The Wacom tablet has the premier pressure sensitive stylus.



See Listings

Mac'sPlace

Call 1-800-367-4222 or Fax your P.O. 1-206-881-3090

7 System 7 Compatible 70 System 7 Savvy 0 30-60 Day Money Back Guarantee

"Our people use most ever"

Access CD Allegro

Optical Access Intl. 7 The fastest CD-ROM drive available with a 310 ms. access time. Includes SuperCache® software for lightning speed access to large amounts of information. Features headphone jack, stereo RCA type audio connectors, and deluxe desk accessory. Includes cable, sample CD, and one caddy.

\$648

Call

PowerBook RAM

Mac's Place 7 PowerBook RAM-
Now available! RAM for your Powerbook 100, 140 or 170.
Expand to 4, 6 or 8 megabytes Available from
Mac's Place. Call for pricing today.

Sherlock Holmes Consulting Detective CD

ICOM 7 Match your wits with the super-sleuth! Over 90 minutes of full-motion video let you take Sherlock and Watson through the streets of London to interrogate suspects and solve three murder mysteries. Unbelievable fun!

\$44

PowerBundle

T/Maker 7 A collection of specially selected software for Mac PowerBooks bundled together in a high quality custom carrying case. Includes WriteNow, ClickArt for Faxes, AddressBook Plus, Business Expense Reports, and America Online. A \$588.80 value!

\$158

Showplace/MacRenderMan CD-ROM

Pixar 7 This CD-ROM is packed with plenty of programming. First, there's Showplace and MacRenderMan. Plus online documentation for both products, a gallery of images created with Pixar products, a sample of Pixar animations, and information about Pixar and its products.

\$644/448

Nautilus Backpack

Discovery 7 Sample top-selling Mac CD ROM products! Backpack trial subscription includes six CD ROM issues of NAUTILUS with over 2 gigabytes of software including games, sound effects, music tracks, MIDI, digitized photos, Hypercard® stacks, multimedia presentations and more.

\$44

Hard Drive TuneUp Includes System 7!

Software Architects 7 Everything-and we mean everything-you need to switch to System 7. Includes The System 7 Book by Craig Danuloff and exclusive Hard Disk TuneUp software that lets you prepare your hard disks for System 7 safely and easily. Allows you to upgrade your drive to take advantage of new System 7 features. Makes your drive run faster and safer too! Supports Apple and most third party hard drives. Includes 3-month membership in Corvallis Macintosh Users Group, incl. newsletters, get all this and CMUG gives you System 7 free. Limited time offer-order today.

\$59

DTPro CD ROM

FM Waves 7 Well over 500 professional EPS images for the discriminating designer. Borders, Icons, Arrows and Design elements for newsletters, magazines, office memos, faxes and all of your creative projects. Graphic Originals - Clip Art with an Attitude - For Distinctive documents, fascinating forms and notable newsletters pick from one of 15 collections between \$28 and \$58 each set.

\$88

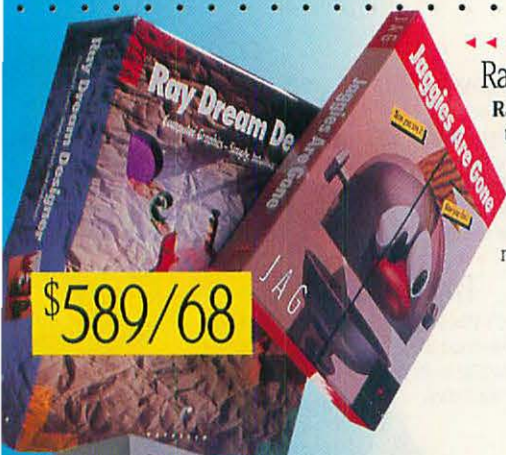
Mac's Place

Call 1-800-367-4222 or Fax your P.O. 1-206-881-3090

7 System 7 Compatible 7 System 7 Savvy 7 30-60 Day Money Back Guarantee

"System seven software"

"Not sure what works best? Call us today."—Mac



\$589/68

Ray Dream Designer and Jag

Ray Dream 7.0 Ray Dream Designer is 3D illustration software, designed to produce high-resolution, full-color graphics with illustration tools like Bezier curves. Supports CAD software with DFX import/export. Jag gets rid of the jagged edges in artwork created in any Mac color paint, photo-retouching, multi-media or 3D software (PICT/PIGS).

Hard Disk ToolKit

FWB 7 This savvy utility is a must for all power users. It supports all SCSI hard drives, removables and opticals with formatting, partitioning, password protection, encryption, benchmarking and more.



\$126



\$378

MICRO PLANNER Manager

Micro Planning Intl. 7 The ultimate in power, presentation graphics, and ease of use for managing projects of up to 1,500 tasks. Features PERT, GANTT, Outline, or Table formats. Plus custom screens, reports, and chart symbols.

Tiles

CE Software 7.0 Tiles saves time and frees up mindspace so you can focus on the project at hand. It automatically organizes your computer environment, and can play macros by importing QuickKeys sequences.



\$68



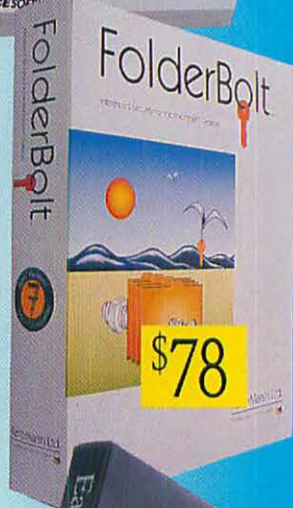
\$75

PowerKey 2.0 w/QuickKeys Lite

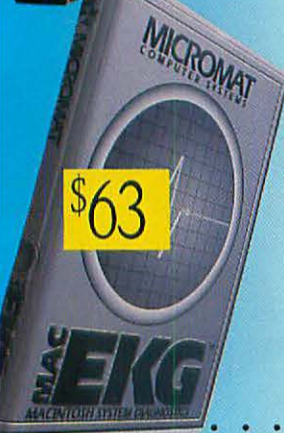
Sophisticated Circuits 7.0 Turns on your Macintosh and peripherals from the keyboard. Programmable with an on/off schedule. New open architecture allows access from other applications such as MicroMat's MacEKG. Remote option lets you turn on your system with a single phone call. Works with all ADB equipped Macs. Supports Apple events

FolderBolt

Kent Marsh Ltd. 7.0 Here's simple, effective desktop security. FolderBolt lets you password protect any single folder or group of folders, including the system folder. Creates drop, read only or completely locked folders.



\$78



\$63

MacEKG

MicroMat 7 Now includes a new utility called REActivator, which interfaces to Sophisticated Circuits PowerKey 2.0, allowing technicians to REALLY test all the of the Mac's facilities. Virtually a "diagnostic dashboard" for your Mac.

Easy Alarms 1.5

Essential Software 7.0 Like having a personal secretary! Easy Alarms organizes your schedule, maintains your "to do" list and reminds you of events. With network-wide calendar access, user scripting, AppleEvents sending and receiving, and Notify Pager (beeper) support.



\$32

"Call today. Use it tomorrow."—Mac

"Fax us your PO* to 206-881-3090."—Mac

AddressWriter

CoStar 7 Printing envelopes and postcards is no longer a bear! This dedicated printer professionally prints addresses and postal bar codes. Comes complete with MacEnvelope software and print driver utility.

\$498

Soft PC Universal 2.5 / Soft Node

Insignia 7 Add SoftNode to either Universal SoftPC or SoftAT and your Mac will run MS-DOS applications and share programs over a Novell PC Network! With SoftPC, your next IBM computer could be a Macintosh.

See Listings

ThoughtPattern

Bananafish Software 7 Get organized and work more efficiently with ThoughtPattern, the information manager that lets you integrate notes and files. Features automatic cross-referencing, powerful searches, alarms, priorities and direct launching of other applications.

\$94

DiskTwin and TwinIt

Golden Triangle 7 Continuously back up your hard disk to another storage device to eliminate downtime. DiskTwin provides simultaneous backup for file servers and mail servers and requires no network downtime in the event of a primary drive failure. TwinIt offers low-cost software mirroring. 4 1/2 mice MacUser!

See Listings

Star Trek Sounds

Sound Source Unlimited 7 Set your Mac on stun with these exciting new Star Trek sounds—just in time to celebrate the tv show's 25th anniversary. Two volumes of high-quality digital recordings: Volume One, "The Logical Collection", includes everyone's favorite dialog, sound effects, and music cues. Volume Two, "The Final Frontier," features sounds ideally suited to the hard-core Trekkie.

\$29 ea

Tesseract and Mutant Beach

InLine Design 7 Stunningly beautiful Tesseract, a refreshing, exasperating full-color puzzle that's both beautiful and addictive. 1991 MacWorld Game Hall of Fame Winner! Take your Mac to Mutant Beach! The fully-animated, full-color interactive action adventure that's state of the art.

\$40/31

ORDER INFO

Mac's Policies

- Visa, Mastercard, American Express, and OPTIMA gladly accepted.
- Your credit card is never charged until your products ship.
- When a partial order is shipped, no additional freight is charged for shipments that complete the order (U.S. only).
- Most items carry the manufacturer's 30 or 60 day Money Back Guarantee (MBG). Mac's Place has a 30 day MBG on all hardware (USA only). We maintain the right to limit quantities on MBG returns. Ask for details when ordering.
- 120 day limited warranty on all products, some hardware items carry one and two year warranties. Defective software is replaced immediately with like item(s). Defective hardware items repaired or replaced at our discretion. Loan drives subject to availability (USA only).
- Most personal and company checks approved upon receipt to insure immediate shipment. For non-standard checks and checks over

- \$1,000, allow ten working days for clearance.
 - No sales tax (except WA residents add 8.2% to total, including shipping).
 - All returns must have an authorization number. Please call 800-367-4222.
 - All prices & promotions subject to change without notice. All items subject to availability. Not responsible for typographic errors.
- Orders USA:** Orders placed weekdays by 7:30 am E.S.T., 4:30 pm P.S.T. for "in stock" items ship same day (barring system failure, etc.) for overnight delivery via Airborne Express. Our \$3.00 shipping charge includes insurance at no extra charge. Rural locations may require an additional day for delivery. Areas not serviced by Airborne will be sent via U.S. Postal Service or UPS Second Day. Alaska & Hawaii orders ship UPS 2nd day air. Alaska customers outside metropolitan areas pay full shipping charges, ask for rates.
- Purchase Orders:** Government, School, and Institutional P.O.'s clear immediately. Corporate P.O.'s subject to credit approval.

Full shipping charges apply, prepaid and added.
International Orders: Call 206-883-8312. We ship throughout the free world via Airborne Express International. Contact Mac's Place for information. Mail, FAX or electronic orders gladly accepted.
Electronic Mail Orders: Compuserve (76635.660) Genie (PLACE), America Online (Mac'sPlace). Mac's Place uses CE Software's QuickMail™ to check our mail each hour.
Phone: 800-367-4222, 206-883-8312, FAX 206-881-3090
 © 1991 Mac's Place, Inc.

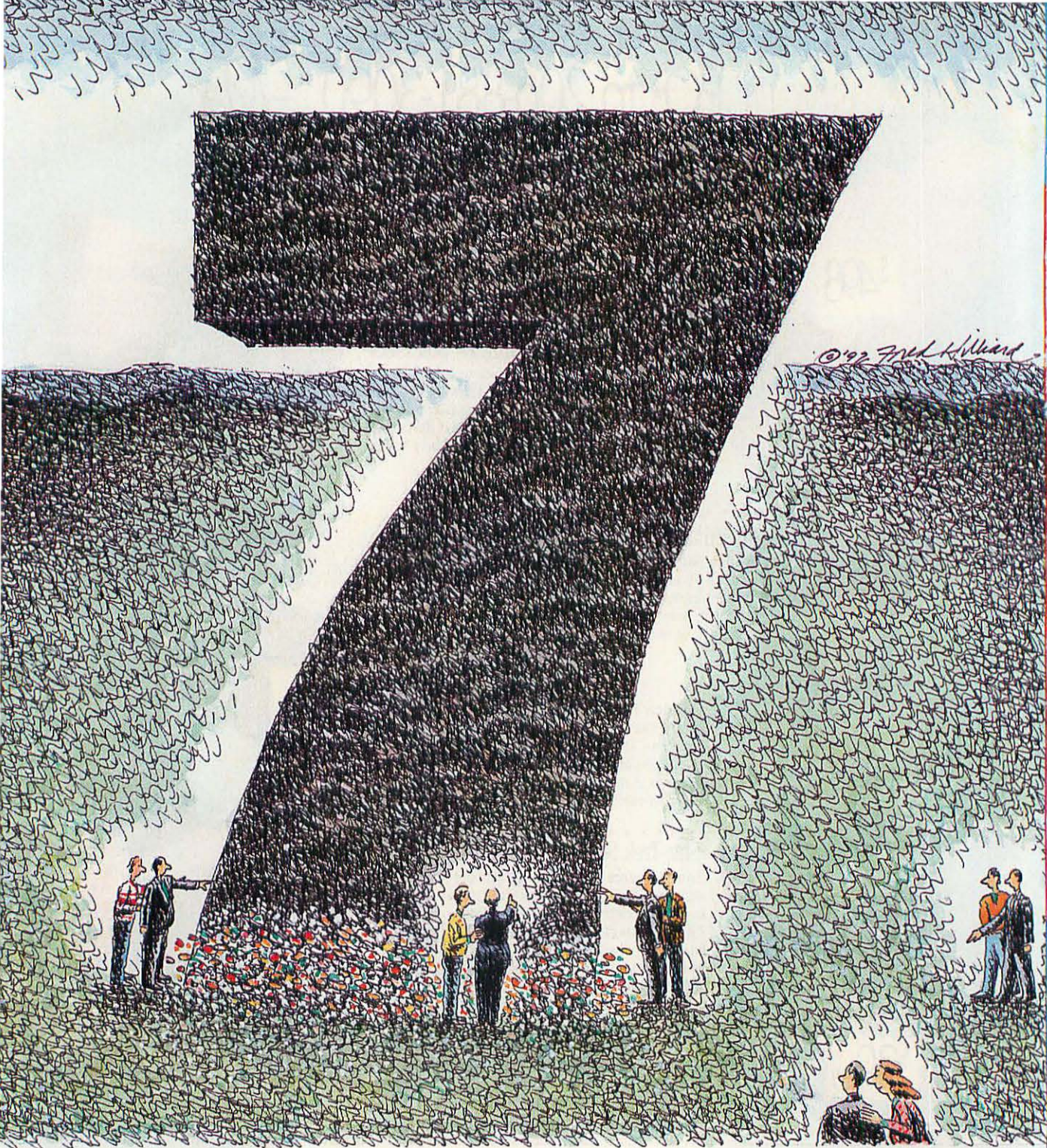
Like all aspects of Mac's Place's operation, this ad was entirely designed and assembled using Macintosh technology. No paste-up. No stripping.

Mac's Place: 8461 154th Ave NE, Redmond, WA 98052

Call 1-800-367-4222 or Fax your P.O. 1-206-881-3090

7 System 7 Compatible 7 System 7 Savvy 0 30-60 Day Money Back Guarantee

Mac's Place



Mac's Place will help you get comfortable with System 7.

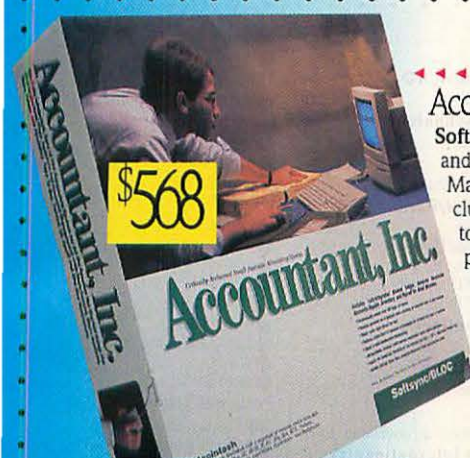
So many products. So little information. Too few facts and too much hype. With so many Macintosh products crowding today's market, how do you choose the ones that work best for you? Simple. You ask the experts at Mac's Place. You see, since we run our company entirely on Macs*, you can bet we know exactly what works...and what doesn't. Take System 7. We've made it our business to know what software is compatible, so you can upgrade without wasting any of your money or time. Our customers keep marvelling at how well we listen and answer questions. Why discover later that you've ordered the wrong product? Just one short phone call can point you the right way.

Mac's Place™

Our Hours: Monday through Friday 6AM-10PM PST and Sat/Sun 6AM-6PM PST Call **1-800-367-4222** US & Canada

*Here at Mac's Place we run our company on Macs. Completely. We understand Macintosh products better than anyone because we use them every day. And since our salespeople aren't on commission like other companies we know, we'll guide you to exactly the right products without wasting your time and money. That's what customer service is all about. Right?

Mac product. Do theirs?"—Mac



\$568

Accountant Inc./Multi-User

SoftSync 700 "The most complete integrated accounting and financial-management package for the Mac..." (MacUser) now supports multi-user networks. Includes invoicing, accounts receivable & payable, inventory, checking, payroll, general ledger and financial reporting.



\$647

Infini-D

Specular 700 Integrated 3D modeling, rendering, animation with an interface so easy you'll create stunning photorealistic graphics within hours. Includes 250 surface libraries, full tutorial, animation viewer. Version 1.1 supports System 7, True Type fonts.



\$192

Timeslips III 2.1

Timeslips 700 NEW! Complete time keeping and billing package. TSTimer DA captures time data. TSReport extracts that data and generates custom invoices and a wide variety of reports. Handles up to 250 users, 250 activities, 3000 clients and 128 projects per client.

In Control

Attain Corporation 700 Are projects getting out of hand? Stay in control with this indispensable application that organizes, categorizes and prioritizes your "to do" list. You get the flexibility of an outline with the power of a row-and-column format.



\$94



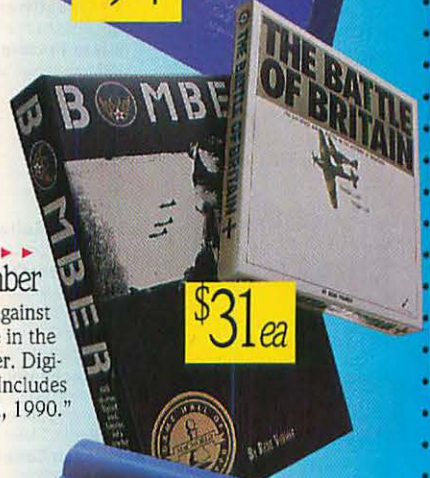
\$30

Flight Simulator Scenery Upgrades

Mallard 7 Tired of cruising the same old skies? Put some excitement back into your Microsoft Flight Simulator trips with these new Scenery Upgrades. Upgrade I: The Eastern Seaboard. Upgrade II: Japan, Hawaii, and New England. Upgrade III: Western Europe. Upgrade IV: The Midwest, Hawaii, and Japan.

Battle of Britain/Bomber

Deadly Games 700 New! Defend England against Germany's vaunted Luftwaffe in the greatest air battle in the history of warfare. Plus the WWII adventure of Bomber. Digitized sound, animation, and a crew that talks back. Includes headphones. MacWorld's "Best Simulation, 1990."



\$31^{ea}

MouseStick (ADB)

Advanced Gravis 700 Only joystick fully compatible with MS Flight Simulator 4.0. Take advantage of Flight Sim's advanced controls for single or dual stick play. Program buttons to execute any Flight Sim. keyboard command, for the most fun in flight.



\$39/59

WristSavers

L.B. Innovators, Inc. 0 Give your wrists a rest! The contoured pad by your keyboard supports your wrist; helps reduce the risk of Carpal Tunnel syndrome. The mousepad also incorporates a contoured wrist pad. Both are neoprene with washable nylon coverings.



\$12^{ea}

uper service."—Mac

Call 1-800-367-4222 or Fax your P.O. 1-206-881-3090

7 System 7 Compatible 7 System 7 Savvy 0 30-60 Day Money Back Guarantee

Mac'sPlace

Call 1-800-367-4222 US & Canada • Visa/MC/AMEX accepted

"Mac's Place goes global with worldwide"

ACCESSORIES

Advanced Gravis	
Mousestick	59.
SuperMouse	84.
Apple	
Toner/Laserwriter II	105.
Articulate Systems	
HeadSet Mike	118.
Voice Impact Pro	218.
Voice Navigator II	548.
Voice Record Software	58.
CoStar Corporation	
LabelWriter II 1" Head	185.
Stringray Trackball	89.
Everex	
Silhouette Trackball	79.
Farallon	
MacRecorder 2.0	169.
Fellowes	
Diskette Holder	
Teakwood Holds 45	18.
Teakwood (Holds 120)	32.
Golden Ribbons	
Imagewriter Multi Color	9.
Imagewriter Ribbons - Black	4.
Kensington Microware	
7' Long ADB Keyboard Cable	24.
Apple Security Kit System	33.
SE Rad/Anti-Glare Filter	52.
Turbo Mouse Adb	107.
Key Tronic	
Mac Pro Plus	143.
TrakPro	218.
L B Innovators, Inc	
WristSaver	
Red, Charcoal or Navy Blue	12.
WristSaver Mouse Pad	
Red, Charcoal or Navy Blue	12.
Mac's Place	
7 Outlet Noise/Surge	15.
Mac's Place Speed Pad	7.
Mac's Place Cable	
Macintosh Cables (Full Line)	
Maxell	
150Meg BU Tape CS600XD	22.
60Meg BU Tape CS600HD	18.
MSC Technologies	
Little Mouse ADB	74.
Sony	
Double Sided 10 Pak	9.
Double Sided-Bulk 50 Pak	33.
HD-Bulk 50 Pak	60.
High Density 10 Pak	15.
Targus	
Mac/SE Bag Black	54.
Extended Keyboard Bag	
Black, Navy, Gray, or Wine	68.

BUSINESS

ACIUS	
4th Dimension V2.2	478.
Advanced Software	
Docucomp	87.
AEC Management Systems	
FastTrack Schedule 1.5	135.
After Hours Software	
TouchBASE 2.0	79.
Attain Corp.	
In Control	94.
Caere Corporation	
OmniPage w/Spell & Draft	489.
CE Software	
QuickMail 2.5	
1 User Add-On	62.
Single User	138.
5 Users	249.
10 Users	375.
50 Users	1549.

Ceres Software	
Inspiration 3.0	158.
CheckMark Software	
Cash Ledger	115.
MultiLedger 2.0	225.
Payroll	169.
Chip Soft	
Macintax 1040 '91 "Headstart" 59.	
Macintax 1040 '91 w/Quicken 88.	
Clarisc	
Clarisc Resolve	268.
Clarisc Works	148.
FileMaker Pro	208.
MacProject II	348.
MacWriteII & Correct Gram.	136.
CompuServe	
CompuServe Membership Kit	21.
CompuServe Navigator	45.
DeltaPoint	
DeltaGraph Professional	192.
Farallon	
Timbuktu 4.0	129.
Timbuktu Remote 2.0	134.
Fox Software	
FoxBASE+Mac	289.
FoxBASE+Mac MultiUser	379.
Freemsoft Company	
White Knight V11	65.
Great Plains Software	
Plains & Simple	255.
IBSO	
Data Club 3 Users	189.
Data Club V2.0 10 User	498.
Insignia Solutions	
Soft PC	
2.5 Universal	239.
2.0 - Classic, LC, SE & Port.	125.
Soft Node	109.
Intuit	
Quicken 3.0	38.
MECA Software	
Managing Your Money 4.0	134.
Micro Planning Intl.	
Micro Planner Manager	378.
Microsoft	
Excel 3.0	298.
Office	478.
PowerPoint	242.
Project	448.
Word 4.0	239.
Works	159.
New Era Software	
nuBASE	179.
Nolo Press	
For The Record	30.
Will Maker 4.0	35.
Odesta	
Double Helix Vers. 3.5	425.
ON Technology	
Instant Update-2 User	278.
Meeting Maker (5 User)	289.
Meeting Maker (10 User)	549.
Paragon Concepts	
Nisus 3.06	238.
Pastel Development	
DayMaker	65.
Peachtree Software	
At Once!	188.
Portfolio Systems	
Dynodex 2.0	71.
Dynodex Page 1.0	72.
Prescience	
Expressionist	77.
Theorist	245.
ProVUE Development	
Panorama II	239.
Quark	
XPress	498.
Reality Technology	
Wealth Builder	94.
Softsync	
Accountant Inc.	339.

Software Ventures	
MicroPhone II V4.0	215.
Spider Island Software	
TeleFinder	
Professional Single User	52.
Group Edition Unlimited	272.
Symantec	
GreatWorks 1.0	198.
More 3.1	264.
Symmetry	
Acta 7	74.
T/Maker	
PowerBundle	158.
Smartbundle	214.
WriteNow 2.2. W/ MacTools	
and GrammatikMac	98.
Teleread	
M.Y.O.B.	139.
Timeslips Corporation	
TimeSlips III v2.1	192.
Tops/Sitka	
Tops 3.1 Network Bundle V3.1	185.
Wolfram Research Inc.	
Mathematica Std 2.0	498.
Mathematica Enhanced 2.0	788.
WordPerfect Corp.	
WordPerfect V2.0	278.

GRAPHICS

3G Graphics	
Images W/Impact	
Accents And Borders	63.
Adobe	
ATM Plus Pack	118.
Illustrator 3.0 w/ATM 2.0	368.
Photoshop 2.0	549.
Streamline 2.0	117.
Type Manager	59.
Type Sets for Business	
Invitations & Awards	95.
Letters, Memos & Faxes	95.
Overheads & Slides	95.
Aldus	
Freehand 3.0	397.
Gallery Effects	128.
Pagemaker 4.0	497.
Personal Press	Call
Persuas on 2.0	325.
SuperPaint 3.0	129.
Altys	
Fontographer 3.3	262.
Metamorphosis	89.
Ares Software	
FontMonger	62.
Baseline Publishing	
Color MacCheese	49.
Broderbund	
Banner Mania	35.
Print Shop	35.
TypeStyle 2.0 w/ATM	126.
Clarisc	
Clarisc CAD	598.
MacDraw II	299.
MacDraw Pro	278.
Custom Applications	
Freedom of Press Lite	55.
Delta Tao Software	
Monet	238.
Deneba	
Canvas V3.0	248.
Ultrapaint	124.
Eastgate Systems	
Fontina	35.
ElseWare Corp.	
DataShaper	135.
FM Waves	
Portfolios	
Agenda for the 90's	52.
Business Cartoons	52.
Education	52.
EPS Borders	26.

Fantasy	52.
Fashion	52.
Fractal Design	
Painter	258.
Frame Technology	
FrameMaker	594.
Gold Disk	
Animation Works	119.
MacroMind/Paracomp	
FilmMaker	429.
MacroMind Director	689.
Model Shop V2.0	0.
Swivel 3D Professional	429.
Swivel 3D V1.2	294.
MicroFrontier	
Color It!	69.
Motion Works	
ProMotion	Call
Pixar	
Showplace/MacRenderMan	644.
Specular International	
Infini-D	647.
SuperMac Software	
PixelPaint Pro	465.
Symmetry	
Mariah	89.
Timeworks	
Publish It! Easy	138.

CD-ROM

Cyan	
Cosmic Osmo	45.
The Manhole	37.
Discovery Systems	
Berkeley BMUG PD ROM	88.
Nautilus BackPac	44.
Nautilus Subscription	20.
Everex	
EMAC Metro CD ROM Drive	469.
FM Waves	
DTP Pro CD-ROM	88.
FM Waves CD-ROM I or II	148.
HyperGlot Software	
Learning To Speak French	59.
Earning To Speak Spanish	59.
ICOM Simulations	
Sherlock Holmes Detective	44.
Optical Access	
CD/Performer (500 ms)	498.
CD/Allegro (310 ms)	648.
Pixar	
Showplace/MacRenderMan	448.
Quantum Leap	
CD-7 Super Library	49.
Giga-ROM - Super Library	98.
Macademic - Education Library	73.

EDUCATIONAL

Broderbund	
Calc., Geom., or Phys.	59.
Kid Pix V1.2	37.
Type!	18.
Davidson & Associates	
Alge-Blaster Plus	34.
Dinosaur Discovery Kit	27.
Math Blaster Mystery	28.
Math Blaster Plus	34.
SAT Personal Trainer	34.
Speed Reader II	28.
Great Wave Software	
Kidsmath	25.
Kidstime	25.
Number Maze	
BWW	25.
Color	33.
Dec. & Frac. Color	33.
HyperGlot Software	
KanjiMaster-Beg. (Japan.)	98.
Pronunciation Tutor	
French, German, Spanish	34.

Word Torture 4.0	
Russ., Span., Fr., Ger., Ital.	33.
Knowledge Revolution	
Interactive Physics	188.
Learning Company	
Math Rabbit	30.
Reader Rabbit 3.0	36.
Writing Center	Call
MECCO	
Number Munchers	28.
Oregon Trail	28.
Word Munchers	28.
Nordico	
MacKids	
Pre-Schoolpack	35.
Turbo Math Facts	25.
Word Quest	31.
Word Search Deluxe	35.
Personal Training Sys.	
Beg., Int. and Adv. Modules for:	
Aldus PageMaker, Persuasion	
Clarisc Filemaker Pro, Hypercard	
MS Excel, Word & Works	
Quark Xpress, & System 7. ea.	49.
Simon & Schuster	
Typing Tutor IV	28.
Software Toolworks	
Mavis Beacon Typing	29.

ENTERTAINMENT

Accolade	
Hardball II	31.
Ishido: The Way of Stones	32.
Stratego	29.
Test Drive II The Duel	36.
Baseline Publishing	
Talking Moose	22.
Broderbund	
Ancient Art Of War or Sea	26.
Carmen San Diego:	
Europe, Time, USA, World. ea.	29.
Patton Strikes Back	36.
Playmaker Football	29.
Robospot	35.
SimAnt	35.
SimCity	29.
SimCity Supreme	47.
SimEarth	40.
The Playroom V2.0	29.
Casady & Greene	
Aqua Bloopster Piper	28.
Crystal Quest & Critter Ed.	44.
Glider 4.0	29.
Mission Star, or Sky Shad.	28.
Deadly Games	
Battle of Britain II	31.
Bomber (w/Headphones)	31.
Delta Tao Software	
Spaceward Ho!	35.
Strategic Conquest 3.0	35.
Electronic Arts	
PGA Tour Golf	36.
Weaver Baseball	29.
Inline Design	
3 in Three	31.
Darwin's Dilemma	31.
Mutant Beach	40.
Swamp Gas	31.
Tesseract	31.
Lucasfilm Games	
Indiana Jones/Last Crusade	28.
Loom	29.
Pipe Dream	17.
Mallard Software	
Flight Simulator Add-Ons	
Scenery Upgrade I-IV. ea.	30.
Micro League Sports	
Micro League Baseball II	35.
MicroProse	
Railroad Tycoon	32.
Microsoft	
Flight Simulator 4.0	39.

Mac's Place

Call 1-800-367-4222 or Fax your P.O. 1-206-881-3090

"I'll ship it to you overnight"

System 7 Compatible System 7 Savvy 30-60 Day Money Back Guarantee

service and delivery."—Mac



Mindscape	
Crossword Magic	29.
Sierra On-Line	
Space Quest IV	34.
Silicon Beach Software	
Dark Castle or Beyond	32.
Sir-Tech Software	
Wizardry or II	29.
Wizardry Bane/Cosmic Forge	35.
Software Heaven	
OLDS	25.
Software Toolworks	
Chessmaster 2100	29.
Cabbage King/Gin King	24.
Hunt For Red October	20.
Life And Death	29.
Spectrum Holobyte	
Falcon 2.2	33.
Vette	32.
Tetris Welltris or WordTris	23.
Strategic Simulations, Inc.	
AD&D: Silverblades	38.
AD&D: Curse of Azure Bonds	38.
AD&D: Pool Of Radiance	32.
Strategic Studies Group	
American Civil War Vol 1	30.
Gold of the Americas	30.
Halls Of Montezuma	28.
Panzer Battles	28.
Reach for the Stars	30.
Rommel Battles for N. Africa	28.
Warlords	38.
Three Sixty Pacific Inc.	
Armor Alley	33.
Harpoon	39.
Harpoon BattleSet #2 or #3	20.
Harpoon Scenario Editor	28.
Sands Of Fire	32.
Velocity	
Spectre	38.

HARDWARE

Applied Engineering	
AEHD Superdrive	219.
Cache-In 50 Ili w/68882	1893.
FastMath LC(68882 16MHz)	138.
MacRam Classic Memory Card 44.	
Quadralink w/AE Shadow	199.
QuickSilver Ili	239.
DataLink Express II W/V.42 & MNP 5	
Send & Receive Fax	218.
TransWarp Accelerators	
SE 25MHz w/FPU	788.
SE 40MHz w/FPU	1499.
LC 25MHz w/FPU	828.
LC 40MHz w/FPU	1378.
Asante	
10T Hub	698.
MacCon3 Ili	269.
MacCon3 NB	269.
MacCon3 SE	269.
Caere Corporation	
Typist + Graphics	479.
Dayna Communications	
DaynaFILE II	
1.2MB/1.44MB Dual Drive	688.
DaynaPORT Ethernet Cards	
E30-T	218.
E/C-T	208.
E/C-TFP	328.
E/S-T	208.
E/S-TFP	328.
E/ZT (External)	288.
DayStar Digital	
DualPort Ili	99.
Fast Cache Ili 64K	268.
PowerCache(SE/30, all Ili, and LC)	
33MHz	738.
40MHz	898.
50MHz	1398.
Dove	
DoveFax Desktop Plus V2.0	358.
DoveFax Desktop V2.0	289.

E-Machines	
QuickView Sound	275.
QuickView Studio 1.1	1695.
QuickView Studio Software	428.
QuickView Video	398.
Color Displays	
ColorPage E16	1045.
ColorPage T16	1758.
T19	2958.
TX	1758.
Color Interface Cards	
DoubleColor	345.
DoubleColor LC	425.
Futura EX	568.
Futura MX	1395.
Futura SX	1058.
Futura SX/8	698.
TX SE30/8 and T19 SE30/8	898.
TX/8 and T19/8	898.
TXsi and T19si	898.
Everex	
EMAC 150MB Tape Backup	678.
Farallon	
PhoneNET	
Connector (10PK)	195.
Connectors	29.
LocalTalk Card	208.
Star Connector(10PK)	119.
StarController-EN	1378.
Global Village	
TelePort	
9600 SendFax	179.
A300 (2400 bps)	128.
Golden Triangle	
DiskTwin (Nubus or PDS)	748.
Harris Labs	
Performer 16 MHz Accel	248.
Performer Math Co-Proc 6888178	
Logiccode	
Quicktel Fax Modems	
9624 Send/Receive	148.
9624 V.42bis Send/Receive	198.
Quicktel Modems	
2400 V.42bis	158.
9600 V.32/V.42bis	498.
Micron	
XCEED Color 30	279.
XCEED MacroColor II	469.
Microtek	
ScanMaker 600GS	1098.
ScanMaker 1850S	2258.
ScanMaker 600ZS	1445.
TrueLaser Printer	1398.
Nuvotech	
Turbo Net - Din-8	19.
RasterOps	
Color Monitors	
19" ColorCad Trinitron	3288.
19" Hitachi	2089.
19" Trinitron Monitor	2789.
21" Hitachi Monitor	3398.
Color Video Boards 13" only	
264 SE/30 (24 Bit)	578.
RasterOps 24S	398.
RasterOps 24SI	598.
Color Video Boards 13", 19", 21"	
24XL	2598.
BLC	598.
BXL	668.
BXL	1298.
ColorCad 228	1298.
Monochrome/Grayscale Monitors	
19" Mono/Gray-Scale	998.
21" Mono/Gray-Scale	1358.
Video & Multi Media	
24XLTV	2989.
Expresso Pers.Slide Scan	668.
ImagePak Still Compression	328.
ProVideo 32	1298.
ProVideo PAL	1658.
RasterOps 24STV	1188.
TV Tuner	328.
Video ColorBoard 364	668.
Video Exp (NTSC or PAL)	468.
Video Boards-Grayscale	
ClearVue/GSLC	598.
ClearVue/GSXL	668.

Video Boards-Monochrome	
ClearVue/Classic, LC or XL	ea. 328.
Shiva	
Ethergate	1289.
FastPath 5	1895.
NetBridge	399.
SIMMO	
Single Inline Memory Modules	
SIMM 1 Meg 80ns	39.
SIMM 2 Meg 80ns	99.
SIMM 4 Meg 80ns	159.
SIMM FX 4 Meg 80ns	168.
SIMM FX/NTX 1 Meg 80ns	45.
Sigma Designs	
DoubleUp w/ Disk Doubler	184.
Sophisticated Circuits	
PowerKey Remote	32.
PowerKey w/QuickKeys Lite	Call
Supra Corp.	
Supra Modem	
2400	109.
MacPac 2400	169.
Plus 2400 (MNPS, V.42 BIS)	178.
Supra FaxModem Plus MacPac	198.
Thunderware	
Lightning Scan 400	379.
LightningScan Pro 256	518.
Wacom	
12X12 Digitizers Cordless Stylus	
Electro Static/Firm or Soft Stylus	898.
Standard/Firm or Soft Stylus	828.
6 X 9 Digitizers Cordless Stylus	
Standard/Firm or Soft Stylus	558.

HARD DRIVES

CRU	
Case Opener/Torx Kit	8.
Internal Mounting Kits	
Mounting Bracket (Ili/IIc)	19.
Mounting Bracket (SE/II)	19.
CRU Hard Drive Case	
Half Height Case Platinum	109.
DataPlace	
External Hard Drives	
DP 52 Mb Quantum	289.
DP 105 Mb Quantum	398.
DP 170 Mb Quantum	698.
DP 210 Mb Quantum	689.
DP 425 Mb Quantum	1298.
DP 676 Mb WrenRun II	1998.
Removable Syquest Hard Drives	
DP 44 Mb w/cartridge	458.
DP 88 Mb w/cartridge	598.
Iomage	
Bernoulli	
Transportable 90Mb	788.
Dual Drive 90Mb	1688.
Kit w/MacTools Deluxe	39.
Kit w/Retrospect	98.
Single 90Mb Cartridge	139.
Tri-Pack 90Mb	438.
Quantum 3.5" Drive	
Half Height Drive	
210-MEG 15ms	638.
425-MEG 15ms	1279.
Low Profile	
ProDrive LPS 52MB	238.
ProDrive LPS 105B	369.
Seagate Technology	
Full Height Drive	
WrenRunner II 676 Meg	2088.
Syquest	
44 MEG Cartridges	66.
88 MEG Cartridges	118.

MUSIC

Ars Nova	
Practica Musica 2.3	66.

Electronic Arts	
Deluxe Music Con Set 2.5	82.
Opcode Systems	
Book Of MIDI	29.
EZ Music Starter Kit	155.
EZVision	98.
Galaxy Universal Librarian	198.
MIDI Translator	42.
Studio 3 Midi/Smpte Interface	288.
Vision	378.
Passport Designs	
Audio Trax	197.
MIDI Interface	74.
Note Writer II	348.
PG Music	
Band In A Box	56.

PROGRAMMING

Bowers Development	
AppMaker	214.
Claris	
Hypercard V2.1	148.
Microsoft	
QuickBASIC 1.0	64.
Symantec	
Just Enough Pascal	49.
Think C 5.0	209.
THINK Pascal 4.0	159.
Think Reference	59.
TGS Systems	
Prograph V2.5	298.
Zedcor Inc	
ZBasic 5.0	95.

BOOKS

Addison Wesley	
C++ Prog w/MacApp & Disk	27.
Guide to Mac Family Hardware	21.
Mac C Programming Vol 1 or 2	19.
Mac C Programming Vol 2	19.
Mac Pascal Prog. Vol 1	19.
Macintosh Program Secrets	18.
Progrs. Online Companion	32.
Inside Macintosh Series	
Vol. 1	18.
Vol. 2, 4 or 5	19.
Vol. 3	17.
Vol. 6	38.
X-REF for Vol. 1-6	9.
Inside Out Series	
Complete Book of HyperTalk 2	19.
Elements of C++ Mac Prog	19.
Learn C w/Think C Lite	28.
Mac Prog Guide MPW Vol 1	19.
ResEdit Ref. (w/ResEdit 2.1)	23.
System 7 Revealed	18.
Bantam Books	
Hypercard Handbook	21.
Microsoft Press	
MS Excel 3 Companion	20.
Peachpit Press	
Canvas 3.0: The Book	17.
DataBase 101 W/ Demo Disk	14.
Little Mac Book, 2nd ed.	12.
Little QuickKeys Book	12.
Little System 7 Book	10.
Macintosh Font Book	18.
QuarkXpress Book	20.
Real World Freehand	22.
Ventana Press	
The System 7 Book	19.

UTILITIES

Advanced Software	
Intouch V1.1	39.
QuickTools	38.
Aladdin Systems	
StuffIt Deluxe 2.0	59.

Alsoft	
DiskExpress II	53.
Alysis Software Corp.	
SuperDisk 2.0	56.
Baseline Publishing	
INIT Manager	33.
Thunder 7	55.
Berkeley Systems	
After Dark & M.A.D. Bundle	41.
After Dark 2.0	26.
More After Dark (M.A.D.)	26.
Bright Star Technology	
At Your Service	29.
New Actor Add-Ons	ea. 10.
Casady & Greene	
Crash Barrier	48.
QuickDex II	22.
CE Software	
Alarming Events	83.
Calendarmaker 3.0	31.
Desktop 4.0 - Gofor & Util	62.
QuickKeys 2.1	89.
Connectix	
Compact Virtual - 68000s	72.
HandOff II 2.2	55.
Maxima 2.0	45.
Virtual 3.0	69.
Dantz Development	
DiskFit Pro	78.
Retrospect	145.
Retrospect w/Remote 10 pk	264.
Dayna Communications	
Dos Mounter V2.0	53.
Dubi-Click Software	
ClickChange	58.
Fifth Generation	
Fast Back II	118.
Suitcase II V2.0	49.
SuperLaserSpool 2.0	92.
Superspool 5.0	57.
Golden Triangle	
DiskMaker	55.
Twintit (Software)	172.
ICOM Simulations	
On Cue II	Call
Insight Development	
MacPrint 1.2	84.
Kent Marsh LTD	
NightWatch II	Call
GuardCard	Call
Microcom	
Virex	57.
MicroMat	
MacEKG	63.
Microseeds	
HAM	49.
Redux	49.
Now Software	
Now Utilities V3.0	83.
ON Technology	
On Location 2.0	74.
Sabastian Software	
Image Grabber 2.0	34.
Salient	
Disk Doubler	38.
SoftWriters	
7-Updater (6 User)	66.
Version Territory 2.0 (10 user)	138.
Version Territory 2.0 (Unltd)	1388.
Sound Source Unlimited	
SoundWare	
Star Trek Sounds Vol. 1 or 2	29.
Symantec	
Toolbox V1.1	79.
S.A.M.I.I.	59.
S.U.M.I.I.	96.
Thought I Could	
Wallpaper	38.
Working Software, Inc.	
Last Resort	38.

or just \$3."—Mac

Circle 209 on reader service card

Call 1-800-367-4222 or Fax your P.O. 1-206-881-3090

System 7 Compatible System 7 Savvy 30-60 Day Money Back Guarantee

Mac's Place

**NOW
ONLY
\$249!**

I'm good at desktop publishing. But desktop accounting scared me. The thought of doing bookkeeping for my design studio made me nervous.



When I heard "balance sheet," I broke into a sweat. I know type, advertising, printing. Now I was forced to do our books.

No choice.

We were on our third part-time bookkeeper in eleven months, and she was called away suddenly. Sound familiar?

But I'm the boss and the buck stops with me. We had bills to pay, payroll checks to write, invoices to send, taxes to set aside.

And deadbeats to collect from—only I had no idea who owed us how much or for how long. Some suppliers may have even

thought of us as deadbeats. I needed to know our cash flow, and get a handle on all this. But I didn't have a lot of time.

Step one: find an accounting program that feels as familiar as our Macs, that starts out easy, but has lots of reserve firepower for later on.

I found atOnce! The manual looked orderly. I dug in...

The familiar with the unfamiliar
atOnce! starts you off with a tutorial that uses HyperCard, one of my old favorites. I was at home.

Numbers are my nemesis, but the tutorial was actually fun and got me comfortable. It takes you step by step through the program, and gives you some easy-to-swallow accounting basics so you're not reading a foreign language. There's context-sensitive help, just in case.

And while you learn, you can start to set up your books. So it doesn't come in a flash and you sweat a little. But you do it and you learn.

I started off light. Double-clicked on one of the default charts of accounts and my General Ledger was practically set up for me. Then entered a few client names in Accounts Receivable, to get an idea of what was coming in. Prepared six invoices—and atOnce! calculated sales tax. Nice. Printed the invoices which I redesigned in atOnce!—realign a field here, change a font there. The usual.

Then ran a Customer Aging Report to identify the slow-payers (I had no idea such a terrific thing was even possible).

MacWorld:
1990 and 1991 World
Class Award
MacUser:
1989 Editor's Choice
Award and 4.5 mice
30 days free support
60-Day Money Back
Guarantee if bought
from Peachtree.
Money back, minus
\$25 re-stocking fee.

**What I didn't
know was costing
my company**

I discovered a key client who hadn't paid in two months. I called

and collected and now *he* wants to know about atOnce! I wrote payroll checks for the staff, and sent our bank a balance sheet I printed out myself—no sweat.

From fear and loathing to passion. Now I even study the management reports atOnce! generates.

I'm still an art director. But atOnce! helped me become a better businessman!

A hidden bonus made my day

When our bookkeeper returned, I showed her atOnce! Now she even makes sure my plants are green. Putting the books on the Mac lets me take control.

Here's some free advice: Take control of your *own* business. Buy atOnce!

**Call now to order
1-800-247-3224**



Peachtree Software
1505 Pavilion Place
Norcross GA 30093
404 564-5800



Circle 100 on reader service card

SYSTEM REQUIREMENTS: MACINTOSH PLUS OR ABOVE WITH AT LEAST 1 MB RAM, SYSTEM VERSION 6.0 OR HIGHER, HARD DISK AND ONE WORK FLOPPY DRIVE. IMAGEWRITER AND LASERWRITER PRINTER COMPATIBLE. APPLESHARE™ AND TOPS™ COMPATIBLE. COPYRIGHT 1991 PEACHTREE SOFTWARE, INC. ALL RIGHTS RESERVED. ATONCE! IS A REGISTERED TRADEMARK OF PEACHTREE SOFTWARE, INC. MACINTOSH, HYPERCARD, IMAGEWRITER AND LASERWRITER ARE REGISTERED TRADEMARKS AND APPLESHARE IS A TRADEMARK OF APPLE COMPUTER, INC. TOPS IS A REGISTERED TRADEMARK OF SUN MICROSYSTEMS, INC.

Alternative Mass Storage

BY JIM HEID

SOONER OR LATER YOU WILL fill your Mac's hard drive. It will happen sooner if you're into megabyte-munching applications such as image scanning or digital audio recording. Or it might happen later, as you acquire more and more software and use it to create more and more documents. Whenever it happens, you'll face the ugly chore of *archiving*—copying dusty old folders and files to floppy disks to free up space on your hard drive.

Even if you don't worry about a hard drive's finite capacity, some of its other limitations may concern you. Internal hard drives simply aren't portable—which makes it difficult to move a large number of files to a different Mac. And if you store confidential information, you have to resort to security programs, which scramble and unscramble files based on passwords you type. Programs such as Fifth Generation Systems' Disk-Lock work, but they add hassles to your work routine—especially if you forget a password.

Although external hard drives are more mobile and can be locked in a safe, you need to wrestle with SCSI cables before you can move them around. What's more, external drives are still delicate instruments that aren't designed for frequent travel. And most make a big bulge in a briefcase.

The ideal storage device would combine the mobility and security of a floppy disk with the speed and space of a hard drive. The good news is that many such devices exist, each with its own merits. Some, such as optical drives, store as much data as would fit on a half-dozen high-capacity hard drives. But because they're slow, such devices are useful primarily for backing up hard drives and for secondary storage—holding files you want to have handy but don't need lightning-fast access to. Others, like removable-media drives, don't store quite as much but are as fast as many hard drives, making them ideal for backing up or replacing a hard drive. Still other devices, WORM drives, can hold the contents of a small library—but you can't erase those contents. This month I explore the most

popular alternative mass storage devices. "Storage Options at a Glance" lists the salient points of each technology.

Media on the Move

THE ONE TRAIT ALL HARD DRIVE ALTERNATIVES share is that their media—the stuff that holds the data—are removable. When you've filled one cartridge, eject it and pop in another. Or use cartridges dedicated for certain tasks—word processing, desktop publishing, and so on.

The most popular removable-media drives in the Mac world are built around a mechanism manufactured by SyQuest and licensed to many well-known hard drive vendors, which then package and sell them under their own labels. SyQuest drives include Mass Microsystems' Data-Pak series, Peripheral Land's (PLI) Infinity Turbo 40, and MicroNet Technology's MR-45 and MR-90, to name only a few. The SyQuest mechanism works much like a conventional hard drive, except it uses a single metal platter instead of several, and the platter itself lives in a portable plastic cartridge that you can eject. What about dust, a hard drive's biggest enemy? When you insert a cartridge, the drive spins the platter at high speed for a few seconds in a routine designed to blow foreign intruders away.

The original SyQuest mechanism used cartridges that held roughly 44MB—the equivalent of more than 30 high-density floppy disks. Last year SyQuest unveiled a new mechanism that stores 88MB on similar cartridges. Both mechanisms are almost as fast as the 40MB internal hard drives most Macs come with. The new drives can read from, but not write to, 44MB cartridges. The 44MB mechanism is still manufactured, and many firms offer both. As you'd expect, the 88MB version costs more. For example, FWB's hammerDisk44 retails for \$1099, while the hammerDisk88 goes for \$1499. Similarly, Relax Technology's Relax Mobile 44 Vista sells for \$429, while the Mobile 88 Vista sells for \$599. Cartridge prices are similar: 44MB cartridges usually sell

for between \$68 and \$116 each, while 88MB versions cost between \$119 and \$229, depending on where you buy. Some firms also sell versatile dual-drive models. With such a box, you can use both drives for primary storage, or use one to back up the other.

SyQuest removable drives have had a mixed reputation since their debut in 1988. On the whole, they have not proven to be as reliable as conventional hard drives. One reason may be the design of the cartridges themselves—their simple case does little to protect the metal platter from contamination. With older SyQuest mechanisms, you can also eject a cartridge while its platter is still spinning, risking damage to the drive's heads and the platter.

But another factor may be a lack of quality control, since SyQuest markets its drive mechanism to so many different vendors. Some SyQuest-based drives are sold by bargain-basement, mail-order vendors that don't extensively test new mechanisms or cartridges and that use cheaper power supplies and other internal components that can directly affect the drive's reliability. This isn't to say that all mail-order drive vendors sell junk or that you must pay top dollar to get a good drive. But you should shop carefully—ask for recommendations at a user group or desktop publishing service bureau. (SyQuest drives are popular among desktop publishers and graphic artists, who often work with huge files that they need to transport to clients and service bureaus.) Also see "Expansion Made Easy" (*Macworld*, May 1991) for a comparison of removable-media drives.

Incidentally, although all vendors use the same basic SyQuest mechanism, you can't always move cartridges from one brand of SyQuest drives to another. Each vendor is responsible for supplying the low-level SCSI driver software that enables the Mac to access the cartridge, and one company's software may be incompatible with another's. If you are buying a SyQuest drive to

continues



*Where
to turn when
a hard
drive isn't
enough*

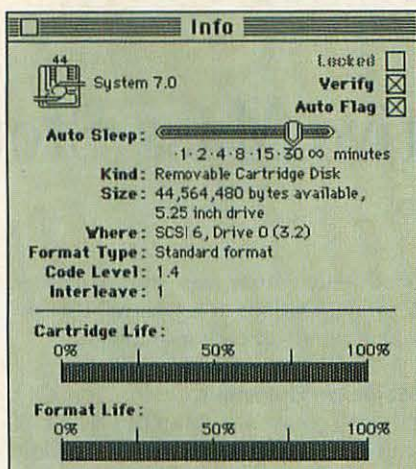
exchange files with someone who already has one, make sure that the two drives can read each other's cartridges. Similarly, if you're acquiring multiple drives, consider buying from one source.

The Bernoulli Effect

THE SYQUEST DRIVES' BIGGEST COMPETITION comes from Iomega, whose Bernoulli (pronounced *bur-NOO-lee*) removable drives have been around in one form or another for nearly ten years. Early Mac models stored 20MB on bulky cartridges, but the latest store 45MB or 90MB on cartridges that are slightly smaller than their SyQuest equivalents.

A Bernoulli drive takes advantage of fluid dynamics principles discovered by eighteenth-century mathematician and physicist Daniel Bernoulli. Inside a Bernoulli cartridge, two spinning flexible disks generate air pressure that forces each disk toward the drive's read-write heads. The same airflow that brings the media to the heads blows dust away from the media. If a foreign invader withstands the wind and wedges itself between the media and the heads, the disks flex to allow it to pass. It's a slick technology that has proven to be very reliable.

On the downside, the media inside the cartridges does wear out over time,



How Much Time Do I Have? Iomega's Workshop utility lets you monitor the health of a Bernoulli cartridge. The Auto Sleep option also lets you specify that a cartridge's disks spin down after a period of inactivity. Designed to conserve battery life on the Bernoulli Portable, this feature also prolongs the cartridge's life—and silences the noisiest part of a Bernoulli drive.

although Iomega warrants cartridges for five years (most firms selling SyQuest cartridges offer only one- or two-year warranties). Bernoulli drives include a utility that tells you how much cartridge life is left (see "How Much Time Do I Have?").

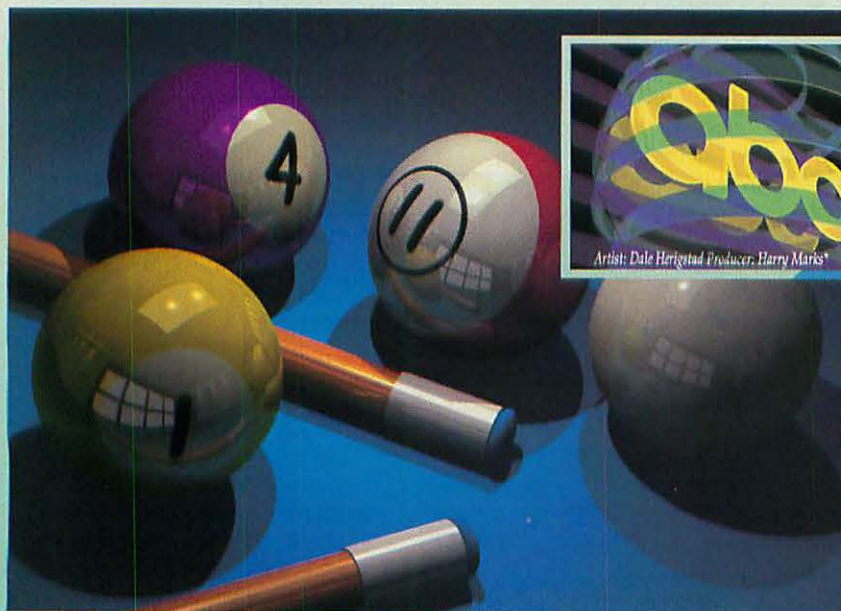
Bernoulli drives are also noisier than SyQuest ones, and the heads in 44MB models require periodic cleaning. The process takes about a minute, but it's a chore that's easy to forget. (The new 90MB drives are self-cleaning.)

Bernoulli drives have a better reliability track record than SyQuest drives do, thanks largely to the Bernoulli technology. But another reason may be that Iomega doesn't sell its mechanisms to other vendors, some of which may be those bargain-basement types that compromise quality. Ocean Microsystems (formerly Bering Computer) used to sell fine Bernoulli-based drives under the Totem moniker, but discontinued the line when Iomega introduced its 90MB units—and slashed prices on its 45MB drives. Iomega is currently the only source for Mac-compatible Bernoulli drives.

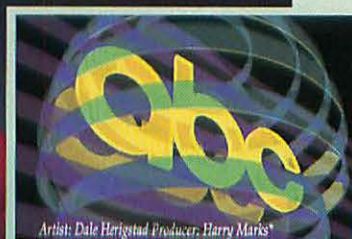
As a result, you won't find the wide price spread—or the bargain prices—that exist in the SyQuest and hard drive worlds. Iomega's battery-powered Bernoulli Portable 44 retails for \$1599; the Transportable 44 sells for \$1259; the Dual 44 is \$2399. The Transportable 90 retails for \$1149, while the Dual 90 goes for \$2249. (Yes, you read that correctly: the 90MB drives cost less than the 44MB

continues

PHOTOREALISM



Artist: Jon Watson; image modeled and rendered entirely in StrataVision 3d.



Artist: Dale Hergstad; Producer: Harry Marks

StrataVision 3d is realistically the best 3D program on the Mac. ● Already donned with industry awards, there's even greater power with version 2.0. Extended modeling gives you more control over objects. Apply realistic textures, set reflectivity and soften shadows with improved ease. Animations of linked objects offer stunning results. StrataVision 3d 2.0 also has a realistic price; \$995. ● Whether you're an illustrator, a designer or an architect, we have the realistic solution. Call toll-free 1-800-869-6855 today.



STRATA

The Virtual Studio™ Company

Strata, Inc. / 2 West St. George Blvd., Suite 2100 / St. George, UT 84770
1-800-869-6855 ext. 400

*StrataVision 3d created the ABC image for animation company. StrataVision and StrataVision 3d are trademarks of Strata, Inc.

Circle 293 on reader service card.

Coming soon to a screen near you.



Out of memory.

OK

If you think the only way to avoid running out of memory is to avoid running a couple of your favorite applications, think again.

Think about all those memory-hogging fonts and sounds you've got stuffed into that bulging System File.

Then do what over 200,000 resourceful Mac users do every day.

Instead of closing your applications, open a Suitcase™.

Suitcase is the award-winning utility that lets you park your growing collection of fonts, DAs, FKEYs and sounds *outside* the System File.

Thereby giving you the maximum amount of memory for running more applications, building bigger documents and doing other useful things.

What's more, Suitcase compresses your screen font and sound files by up to 60%.

Thereby giving you that much more precious disk space to work with.

It even lets you put your screen and printer fonts on a server for all to share.

Thereby making each disk on the network that much more spacious.

The more resources you have—and the more organized you are—the more memory and disk space you'll save.

But whether your dividends are measured in megs or merely in Ks, Suitcase is guaranteed to save you gigabytes of aggravation.



Even if you're operating in System 7.

Because System 7 still stuffs your resources into your System File.

And System 7 still makes you close down all your applications and restart your Mac each time you install a new font.

Which is a real pain in the, uh, system.

Suitcase, on the other hand, gives you unlimited access to all your resources.

And total control over how you organize them.

Each suitcase can pack up to 800 fonts, 64 DAs, and any number of FKEYs and sounds.

You can group suitcases into sets, then summon all the luggage that

Can't remember the difference between Versailles and Monaco? Not to worry. Suitcase displays your typefaces right in the menu.

belongs with a particular project at the click of a mouse.

Tips are optional. But here's one for those of you who find font ID conflicts even more irritating than running out of memory.

Get Suitcase. It eliminates them.

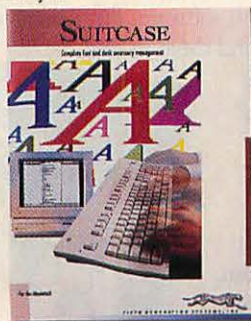
Call us at 1-800-477-8212.

We'll tell you about our vaunted 24-hour toll-free technical support.

We'll also tell you that Suitcase is backed by a one-year money-back guarantee.

So you can be sure this baggage will live up to its claims.

Aachen
Aachen
Avant Garde
Baskerville
Berkeley
Bodoni
Bookman
Caledonia
✓ **Chicago**
Chicago
Futura
Galliard
Garamond
Helvetica
Italia
Janson
Kabel
Los Angeles
Lubalin Graph
Lucida
MACHINE
Monaco
New York
Optima
Palatino
Bauhaus
Times
Trump
Univers
Versailles
Zapf Dingbats



FIFTH GENERATION SYSTEMS, INC

Circle 151 on reader service card

models. Iomega says it streamlined its manufacturing and engineering processes when developing the 90MB drives, and as a result, the drives cost less to produce. The only reason you might want to buy a

44MB drive is if you already have other 44MB drives and cartridges. The 90MB drives can't write to 44MB cartridges, although they read from them.)

Ricoh: The Late Arrival

GCC TECHNOLOGIES AND MICROTCH International are among a handful of firms selling cartridge drives built around a Ricoh mechanism that, like a SyQuest drive, uses a rigid disk platter. The platter in a Ricoh cartridge, however, is better protected against dust and contamination by several air filters and seals. A Ricoh cartridge's locking door also makes it more difficult to accidentally finger the platter inside.

But Ricoh cartridges store only about 50MB—roughly half as much as the latest SyQuests and Bernoullis store—and the drive prices are a bit steep. GCC's UltraDrive 50R sells for \$1099, while Microtech's R50 retails for \$1299. Cartridges sell for \$129 each. And the fact that there just aren't many drives out there may be a drawback if you're buying a cartridge drive to exchange large files with others.

Life with a Cartridge

USING ANY ONE OF THESE REMOVABLE-cartridge drives is a lot like working with

a hard drive or floppy disks, but there are a few differences to keep in mind, especially with SyQuest-based drives. Ejecting a SyQuest cartridge is a multistep process: drag the cartridge's icon to the Trash, press a stop button on the drive, and then flip an eject lever on the drive. In a related vein, some SyQuest drives won't recognize a cartridge inserted after you've started up the Mac. Better SyQuest vendors include system extension software that enables the Mac to recognize cartridges inserted after start-up. (Bernoulli and Ricoh drives include this software.)

If you use Apple's System 7 with a 68030-based Mac (or with a 68020- and PMMU-equipped Mac), you should know that System 7's virtual memory feature isn't available when the start-up drive is a removable cartridge. Virtual memory requires the use of a *swap file* containing the data that System 7 swaps between real memory and the drive. If you were to eject a cartridge containing the swap file, you'd perform the equivalent of removing a car's tires while it was moving, and the results wouldn't be pretty.

As someone who uses Bernoulli drives for primary storage, I found this particularly frustrating. Then I discovered

continues

Double the Data

Iomega's 90MB Bernoulli cartridges have more than twice the capacity of their 44MB predecessors. Because 44MB Bernoulli cartridges use a rustlike iron-oxide medium that is relatively difficult to magnetize, the particles have to be spaced farther apart. The new 90MB cartridges use a metal-particle magnetic media that has twice the magnetic response as iron oxide, so data can be packed more tightly on the disk. A 44MB cartridge contains 28,000 bits per inch and 1100 tracks per inch; a 90MB cartridge has 37,000 bits per inch and 1600 tracks per inch. Because bits on the 90MB disk are closer together (and both 90MB and 44MB disks spin at the same speed), more bits are transferred by the 90MB drive in the same amount of time, which means a faster data-transfer rate.

THE YELLOW PAGES FOR MAC DEVELOPERS

Until now, it's been difficult to track down qualified, talented resources to develop Macintosh software. But now you can quickly find them in one convenient place.

The *Macintosh® Development Services Directory™* is the first source-book that will help you design, program, test and sell software successfully. And cut your development time dramatically.

You'll discover the right people to supplement your in-house staff. Develop customized applications. Create interactive,

multimedia presentations. Help you market your product overseas. And much more.

The latest edition is available now, direct from the publisher, for only \$14.95.* To order, call toll-free.

1-800-927-1100

Ext. 400

Detailed, cross-indexed profiles of nearly 1000 Macintosh resources, including contract programmers, testers, trainers, technical writers and more.



MZ Group
221 Main Street
San Francisco, CA 94105

*Plus \$6.50 shipping & handling. CA residents add sales tax. © 1991 MZ Group. Int'l orders: 916-677-7171.

Circle 223 on reader service card.

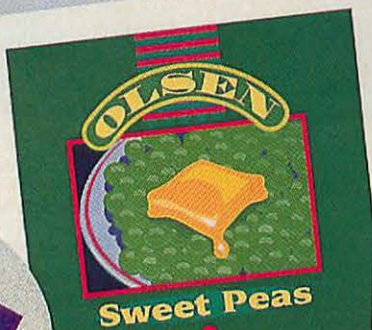
CARE plants the most wonderful seeds on earth.

Seeds of self-sufficiency that help starving people become healthy, productive people. And we do it village by village by village. Please help us turn cries for help into the laughter of hope.



1-800-521-CARE

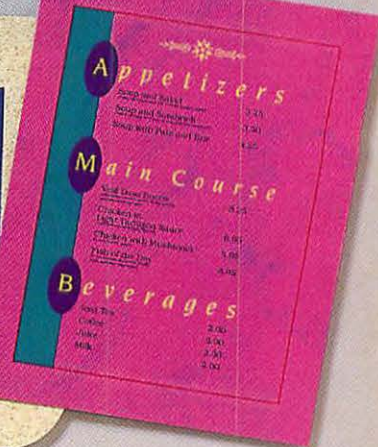
20 lb. copy paper



80 lb. text



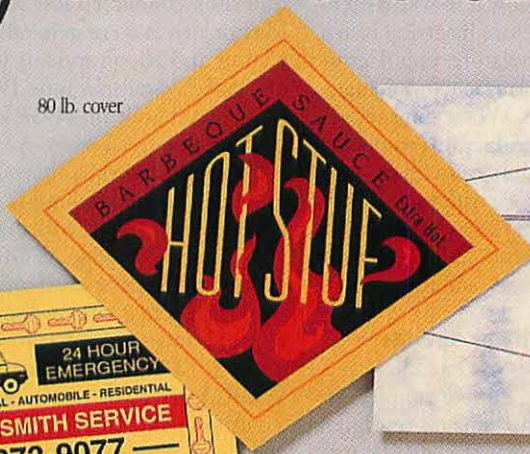
60 lb. marbled paper



60 lb. text

It can take any paper you feed it.

80 lb. cover



FRANCO
Bella
1988 ZINFANDEL

60 lb. marbled vellum

24 lb. bond



20 lb. yellow pages paper



Have you ever wondered what your design would look like printed on a grocery bag? Okay, maybe not. But when you're working with a Phaser™ III color printer, your thoughts do tend to go a little wild.

Because you can feed the Phaser III any kind of paper, from 80 lb. bond to acetate. Even paper towels. It also takes sizes up to 12" x 18" for printing tabloid bleeds. And with 16.7 million colors delivered at 300 dpi, you get gorgeous color on any media.

It's driven by a 24 MHz RISC chip with 10 MB RAM. Fast enough for you? And with Adobe's PostScript™ Language Level 2, your message will come out loud and clear.

The only thing you need is a well-fed imagination. Call 1-800-835-6100 Dept. 21C for your free output sample.



Tektronix
The best and the brightest.



Phaser is a trademark of Tektronix, Inc. for color printers and related products. PostScript is a trademark of Adobe Systems Incorporated which is registered in the USA and other countries. Other marks are trademarks or registered trademarks of the manufacturers or marketers of the products with which the marks are associated.

Circle 143 on reader service card

STORAGE OPTIONS AT A GLANCE

Technology	SUITABILITY TO TASK			Pros	Cons
	Primary Storage	Secondary Storage	Backup		
SyQuest removable drives	very good	excellent	excellent	large installed base of users; inexpensive	mixed reliability track record
Bernoulli removable drives	very good	excellent	excellent	reliable	costly; noisy; portable and transportable drives are heavy
Ricoh removable drives	very good	excellent	excellent	potentially more reliable than SyQuest drive	costly; cartridges hold only 50MB
Erasable optical drives	poor	very good	excellent	large capacity; low cost per megabyte	costly; too slow for primary storage
WORM drives	poor	very good	poor	large capacity; stored data is immune to magnetic fields and erasure	costly; slow
Tape drives	poor	poor	excellent	inexpensive; many drives to choose from	not suitable for primary or secondary storage

FWB's Hard Disk Toolkit software, which allows you to make virtual memory available for ejectable cartridges. The software includes a terrific array of features for formatting and fine-tuning drives of all kinds. It includes software that enables the Mac to recognize SyQuest cartridges inserted after start-up, as well as formatting software that can overcome the incompatibilities between SyQuest drives from different vendors.

Finally, if you're carrying a cartridge around this winter, allow it to warm up to room temperature before inserting it in a drive. Otherwise, moisture could condense on the platter surface and damage it as well as the drive. When summer arrives, don't leave cartridges in a sunbaked car, where the heat could cause their cases to warp. And keep cartridges (and all disks, for that matter) away from items that generate magnetic fields, such as speakers, electric motors, and telephones.

Higher Capacity, Lower Speeds

FOR SOME APPLICATIONS—BACKING UP A 300MB hard drive, for example, or archiving color scanned images or digital audio recordings—even the 90MB provided by the latest Bernoulli and SyQuest cartridges may not be enough. A variety of optical drives are available whose cartridges store between 128MB and 900MB. Alas, none of these digital warehouses are as fast as a SyQuest, Bernoulli, or Ricoh drive, although some come close. Today's optical drives remain best suited to backup and secondary storage.

There are several optical storage approaches, and all use lasers. *Magneto-optical*, also called *erasable optical* (EO), drives use a high-power laser and an electromagnet to orient magnetic particles embedded in the platter's plastic surface. To read data, the drive turns the laser's intensity down and interprets the reflections from

the magnetic particles. The platter is encased in a floppy-like cartridge. Some EO drives use 5¼-inch cartridges that hold between 500MB and 600MB, but a newer generation of drives uses 3½-inch cartridges that hold about 128MB. These drives are faster than their more-ample cousins. Drives storing 500MB to 600MB cost in the \$4000 to \$6000 ballpark; 128MB EO drives cost about half that. Most major hard drive vendors sell EO drives, using mechanisms built by Sony, Maxtor, Canon, or Ricoh. In *Macworld* Lab tests conducted last year, Sony and Maxtor drives were generally faster than Canon and Ricoh models (see "Optical Outlook," *Macworld*, June 1991).

Then there's the *WORM* drive, short for *write-once, read-many*. A WORM drive is the storage world's equivalent to indelible ink: once something is written to it, it can't be erased. Storing 400MB to 900MB on a cartridge, WORM drives are specialized beasts most often used for storing data that *must not* be altered, such as legal and medical records. Many of today's EO drives can also work as WORM drives.

And finally, there's CD ROM. These cousins to compact discs store 550MB of data that's prerecorded at the factory. You wouldn't use CD ROMs to store your own files, but you might buy commercial CD ROMs and use System 7's file-sharing features to make the contents available on a network. Clip art, fonts, stock photographs, encyclopedias, dictionaries, and other research- and education-oriented CD ROMs are available (see *The Desktop Critic*, *Macworld*, September 1991). CD ROMs' ability to play back digital audio as well as to store data has also made them popular for multimedia (see "Getting Started with Multimedia," *Macworld*, May 1991). CD ROM drives have fallen in price, and generally sell for between \$500 and \$1000.

Other Alternatives

IF YOUR ALTERNATIVE STORAGE NEEDS end with hard drive backup, consider a *tape drive*. These store between 60MB and 600MB on specialized tape cassettes (several formats are available—see "Fast-Forward Storage," *Macworld*, November 1991). Most tape drives sell for less than \$1000, but versatile they're not. You can't use a tape drive for primary storage because tape, unlike a disk, is a *sequential-access* medium. A tape drive must wind through the tape to locate a specific file, while a disk drive's heads can skip around to quickly access any file.

Another alternative for backing up a hard drive is a second hard drive. External hard drives often cost less than the removable-media alternatives I've discussed here, and although they lack the portability and security advantages of removable cartridges, they're fast.

What's ahead? Canon has developed credit card-size WORM storage cards that hold 2MB, and some firms have shown floppies that store up to 20MB. Erasable optical drives are likely to become less expensive and faster—maybe even fast enough for primary storage.

And the cost per megabyte will continue to fall. My first computer had a single floppy disk drive that cost over \$400 and stored about 80K per disk—a cost of about \$72 per megabyte. The Bernoulli cartridges I use today cost about \$2 per megabyte, and SyQuest cartridges cost even less.

Only one thing hasn't changed: I still don't have enough disk space. **m**

See *Where to Buy* for contact information.

Contributing editor JIM HEID looks at a different aspect of Mac fundamentals each month. His latest book, *Macworld Complete Mac Handbook* (IDG Books Worldwide, 1991), is an updated and expanded collection of more than 40 *Getting Started* columns.

FOR BETTER CODE IN LESS TIME, ALL YOU HAVE TO DO IS THINK.

```

OLDVIS=NEWRGN(//SAVECURRENTVISBLEREGIONSIN//COPYRGN(THEPORT>VIS
RGNOLDVIS//CASEWEAUTOSCROLL//IF(ITSPAINTPANE>PANEAUTOSCROLLS(CURRPT)
EQUALPT(CURRPT*PREVPT))ITISPAINTPANE>GETFRAME(&CURRECTA)PININRE
T(&CURRECTCURRPT//GETCURRENTANDPREVIOUS//SELECTIONRECTANGLES//P
RECT(STARTPT*CURRPT&CURRECT)PT2RECT(STARTPT*PREVPT&PREVRECT)PT
HEREWEDOA/LOT/OF/WORKTO//PREVENTFLASHINGOF//THESELECTIONRECT//ANGLE
REVRGN=NEWRGN(//CONSTRUCTREGIONCONSISTINGOF//DRGN=NEWRGN(//ONE
NEPIXELTHICKOUTLINEOFRECT//RGN(GUTILRGN&CURRECT)THECURRENT//SELEC
TIONRECT//COPYRGN(GUTILRGNDRGN)INSETRGN(DRGN11)DIFFRGN(GUTILRGNDRG
GUTILRGN)RECTRGN(PREVRGN&PREVRECT)//CONSTRUCTREGIONCONSISTINGONA
OFA//COPYRGN(PREVRGNDRGN)ONEPIXELTHICKOUTLINEOF//INSETRGN(DRGN11)THE
PREVIOUSSELECTIONRECT//DIFFRGN(PREVRGNDRGNPREVRGN)SECTRGN(PREVRGN
GNOLDVISPREVRGN)GETREGIONSWHICHINCLUDESONLY//THOSEPIXELSTHATARE
NOTIN//BOTHREGIONS//XORRGN(GUTILRGNPREVRGN&GUTILRGN)DISPOSERGN(PR
REVRGN)DISPOSERGN(DRGN)PEN//MODE(PATXOR)PAINTTHISNEWREGIONINGRAYI
N//PENPAT(GRAY)//XORMODESOPIXELAREFLIPPED//PAINTRGN(GUTILRGN)DISPOR
SERGN(OLDVIS)ENDTRACKINGVOID//CSELECTIONRECTENDTRACKING(POINT*CUR
POINT*PREVPTPOINT*STARTPT)RECTCURRENTOLDRECTENDTRACKING(POINT*CUR
CURRENTVISBLEREGIONSIN//COPYRGN(THEPORT>VISRGNOLDVIS//CASE//THEAUTO
SCROLL//IF(ITSPAINTPANE>PANEAUTOSCROLLCURRPT)EQUALPT(CURRPT*PREVPTRI
PENMODES))ITISPAINTPANE>GETFRAME(&CURRECT)PININRECT(&CURRECTCUS
RRPT//GETCURRENTANDPREVIOUS//SELECTIONRECTANGLE//PT2RECT(STARTPT
CURRPT&CURRECT)PT2RECT(STARTPT*PREVPT&PREVRECT)HEREWEDOA/LOT
OF/WORKTO//PREVENTFLASHINGOF//THESELECTIONRECTANGLE//PREVRGN=NEWS
PTS(//CONSTRUCTREGION//CONSISTINGOF//DRGN=NEWRGN(//ONEPIXELTHICKO
UTLINEOF//RECTRGN(GUTILRGN&CURRECT)THECURRENTSELECTIONRECT//COP
YRGN(GUTILRGNDRGN)INSETRGN(DRGN11)DIFFRGN(GUTILRGNDRGN&GUTILRGN)
ECTRGN(PREVRGN&PREVRECT)//CONSTRUCTREGIONCONSISTINGOFA//COPYRGN
SELECTIONRECT//DIFFRGN(PREVRGNDRGNPREVRGN)SECTRGN(PREVRGNOLDVISP
REVRGN)GETREGIONWHICH//INCLUDESONLY//THOSEPIXELSTHATARENOTIN//BYTE
HREGIONS//XORRGN(GUTILRGNPREVRGN&GUTILRGN)DISPOSERGN(PREVRGN)DISP
PREVRGNDRGNONEPIXELTHICK//OUTLINEOF//INSETRGN(DRGN11)THEPREVIOUS
EQUALPT(CURRPT*PREVPT)ITISPAINTPANEGETFRAME(&CURRECT)PININREC
T(&CURRECTCURRPT//GETCURRENTANDPREVIOUS//SELECTIONRECTANGLES//P
RECT(STARTPT*CURRPT&CURRECT)PTRECT(STARTPT*PREVPT&PREVRECT)PT
OFA//COPYRGN(PREVRGNDRGN)ONEPIXELTHICKOUTLINEOF//INSETRGN(DRGN11)THE
PREVIOUSSELECTIONRECT//DIFFRGN(PREVRGNDRGNPREVRGN)SECTRGN(PREVRGN
INGOLDVISPREVRGN)GETREGIONSWHICHINCLUDESONLY//THOSEPIXELSTHATARE
NOTIN//BOTHREGIONS//XORRGN(GUTILRGNPREVRGN&GUTILRGN)DISPOSERGN(PR
REVRGN)DISPOSERGN(DRGN)PEN//MODE(PATXOR)PAINTTHISNEWREGIONINGRAYI
N//PENPAT(GRAY)//XORMODESOPIXELAREFLIPPED//PAINTRGN(GUTILRGN)DISPOR
CURRPT&CURRECT)PT2RECT(STARTPT*PREVPT&PREVRECT)HEREWEDOA/LOT
OF/WORKTO//PREVENTFLASHINGOF//THESELECTIONRECTANGLE//PREVRGN=NEWS
PTS(//CONSTRUCTREGIONCONSISTINGOF//DRGN=NEWRGN(//ONEPIXELTHICKO
UTLINEOF//RECTRGN(GUTILRGN&CURRECT)THECURRENTSELECTIONRECT//COP
YRGN(GUTILRGNDRGN)INSETRGN(DRGN11)DIFFRGN(GUTILRGNDRGN&GUTILRGN)
ECTRGN(PREVRGN&PREVRECT)//CONSTRUCTREGIONCONSISTINGOFA//COPYRGN
SELECTIONRECT//DIFFRGN(PREVRGNDRGNPREVRGN)SECTRGN(PREVRGNOLDVISP
REVRGN)GETREGIONWHICH//INCLUDESONLY//THOSEPIXELSTHATARENOTIN//BYTE
HREGIONS//XORRGN(GUTILRGNPREVRGN&GUTILRGN)DISPOSERGN(PREVRGN)DISP
PREVRGNDRGNONEPIXELTHICK//OUTLINEOF//INSETRGN(DRGN11)ANDPREVIOUS
EQUALPT(CURRPT*PREVPT)ITISPAINTPANEGETFRAME(&CURRECT)PININREC
T(&CURRECTCURRPT//GETCURRENTANDPREVIOUS//SELECTIONRECTANGLES//P
RECT(STARTPT*CURRPT&CURRECT)PTRECT(STARTPT*PREVPT&PREVRECT)PT
SCROLL//IF(ITSPAINTPANEAUTOSCROLL(CURRPT)EQUALPT(CURRPT*PREVPTS
PENMODES))ITISPAINTPANE>GETFRAME(&CURRECT)PININRECT(&CURRECTCUS
RRPT//GETCURRENTANDPREVIOUS//SELECTIONRECTANGLE//PT2RECT(STARTPT

```

INTRODUCING THINK C 5.0 AND THINK PASCAL 4.0.

The best Macintosh programming languages just got better. In fact, the new THINK C™ and the new THINK Pascal™ generate compact, professional-quality code faster than ever before.

The THINK environments integrate all five stages of programming—edit, compile, link, run and debug—for dramatically reduced turnaround times. And they recompile only the code you change for even shorter development times.

In addition, THINK C 5.0 now offers greater efficiency, faster compiling and a new global optimizer, which helps you generate the very finest Macintosh code.

Best of all, both languages support System 7 technology, allowing you to write programs for Apple's new system software. They also provide a choice of object-oriented or procedural programming, along with an enhanced THINK class library and a graphical class browser.

So if you want speed and quality, see your dealer today. Or call us at 1-800-228-4122, Ext. 823G to order THINK C 5.0 for \$249 or THINK Pascal 4.0 for \$199*. We can also give you additional product and upgrade information.

Then you'll really have something to think about.



SYMANTEC.

Circle 96 on reader service card

* Prices good in the U.S.A. only. In Canada, call 1-800-455-2266. Outside North America, call 408-252-3570. © 1991 Symantec Corporation. All rights reserved. THINK C and THINK Pascal are trademarks of Symantec Corp. All other brand or product names are trademarks or registered trademarks of their respective holders.

Full-bleed tabloid



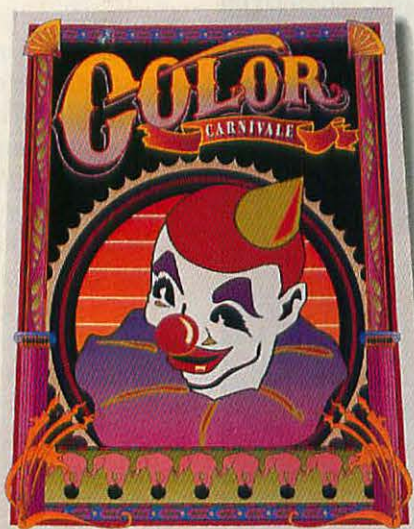
Incomparable Comps.

Outstanding Overheads.



Overhead transparency

Standard tabloid



Fantastic Finish.

Perfect printing.

Your work deserves it and ColorMaster® Plus was specifically designed to deliver it.

ColorMaster Plus has the right resolution: 300 dpi

You get PostScript® language compatibility, and instant access to a wide range of software.

For accurate color, it's PANTONE® approved.

Size selection? Letter or tabloid with full bleed—giving you the largest live image of any cut-sheet desktop printer.

Plenty of ports, too. SCSI, Appletalk, RS-232 and Centronics parallel so you

New ColorMaster Plus



can mix and match different computers on one ColorMaster Plus printer.

Plus, there's something you just can't

get anywhere else: CalComp product quality and long term commitment to service, support and supplies. Our **1-year on-site warranty** is only one example.

Your incredibly intelligent next step? Call **1-800-932-1212** for more information. In Canada, 416-635-9010.

We draw on your imagination.™

CalComp

A Lockheed Company



Phoenix Page Color is a trademark of Phoenix Technologies, Ltd.

© 1992 CalComp Inc. P.O. Box 3250, Anaheim, CA 92803. ColorMaster Plus and We draw on your imagination are trademarks of CalComp. PostScript is a registered trademark of Adobe Systems, Inc. AppleTalk is a registered trademark of Apple Computer Inc. Pantone is a registered trademark of Pantone Inc.

Dealers circle 133 on reader service card

End users circle 3 on reader service card

Insights

BY LON POOLE

Hints for Tapping System 7's Power

To appreciate the power of System 7, you need to get beyond the beginner level. These hints will help you do that by covering a few basics and detailing some more advanced techniques. Read on, then explore and experiment to see what else you can discover and invent.

Hide Windows to Boost Performance

With several programs open, you can spend lots of time waiting for inactive programs to redraw portions of their windows as dialog boxes in the active program come and go. This delay is particularly protracted when using virtual memory, because the window redrawing may require disk access. Eliminate all the delay by choosing Hide Others from the Application menu—hidden windows don't require updating. To hide the active program's windows when switching to another open program, press the option key while choosing the other program from the Application menu in the upper-right corner of the screen.

Edit, Don't Open

Inadvertently opening icons when you mean to edit their names can be aggravating. Try setting a briefer Double-Click Speed in the Mouse control panel. You must wait the duration of whatever double-click

interval has been set in the Mouse control panel (1.6, 1.0, or 0.7 seconds) after selecting an icon name before you can select an insertion point (by clicking), a word (by double-clicking), or a range of text (by dragging) in the name. If you click again too soon, the Finder thinks you're double-clicking the icon and opens it.

Cataloging Items on Removable Disks

Do you have trouble finding items on floppy disks, CD

ROMs, and removable hard drive cartridges that aren't mounted on the desktop? You can use aliases to locate and open these offline items quickly. Here's how. Lock the floppy disk or other removable medium, insert it, and make aliases of the items you want to catalog. A message tells you the removable disk is locked and asks whether you want the aliases to be created on the desktop; click OK. To keep the desktop free of clutter, you can move the aliases to a folder. Now when you need an item

from a removable disk, just double-click the alias you made for it. The Finder tells you the name of the disk to insert so it can open the alias's original item. If you change your mind or can't find the needed disk, there's a Cancel button in the dialog box.

Abridged System Folder

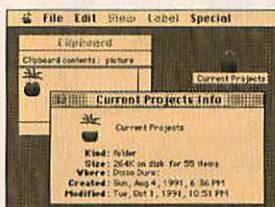
Does finding the Apple Menu Items folder, Startup Items folder, or some other item in your System Folder take too long? Make aliases for the System Folder items you access often—including an alias of the System Folder itself—and consolidate the aliases in a new folder. You can open and find an item in that folder faster than in the System Folder, since the folder of aliases is not as cluttered. To make the new folder look like a System Folder, copy the icon from the System Folder's info window and paste it into the new folder's info window.

Favorite Folders

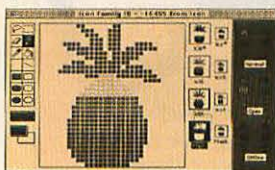
Putting aliases of your favorite folders on the desktop allows you to quickly open them from a directory dialog box. Instead of working your way down through one branch of your folder structure and then working your way up another branch to the folder you want, click the Desktop button and at

Fixing Custom Color Icons

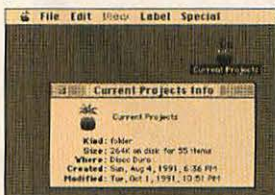
When you paste a color picture into an item's info window, you don't always get what you expect. The Finder sometimes creates an incomplete mask (1). To fix this, launch ResEdit 2.1 and open the item you want to correct. Double-click the icl4 resource. Double-click the icon to get a set of editing tools and a panel in which you can edit the icon pixel by pixel. Then drag the icl4 icon or the icl8 icon over the large Mask icon (2). This creates a better mask that you can edit with the pencil or other tools. To check the new mask, alternately click the icl4 icon and the large Mask icon. Use a parallel procedure to make a new small mask from the ics4 icon. Finally, close all the windows or quit ResEdit and save your changes. To see the finished product, restart the Mac (3).



1

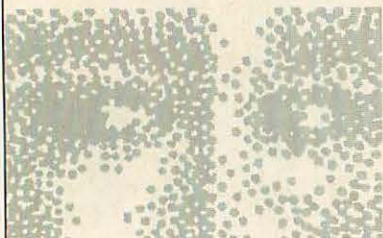


2



3

Video In.



Truly affordable video imaging for Macintosh II computers. ComputerEyes includes everything you need to capture 8- or 24-bit color (or 8-bit gray scale) images from any standard composite or S-Video source.

Gray scale-only version also available for Mac+, SE, or II for under \$250.

Call today for more information and free demo disk.

Digital Vision, Inc.
270 Bridge St., Dedham, MA 02026
(617) 329-5400
To order call (800) 346-0090

**Professional
Series
Color
Video**

**Digitizer
For Under**

\$ 450.

Digital Vision

C O M P U T E R E Y E S™

Circle 242 on reader service card.

GET MEGABYTE PRESENTATION POWER

with the
WIRE-O® Easy Bind



Make professional looking reports and presentations in minutes with attractive WIRE-O® double loop wire bindings—the choice of the computer industry. Pages lie flat and in perfect register. WIRE-O® bindings are available in 16 attractive colors.

**JBI JAMES BURN
INTERNATIONAL**

205 Cottage St., Poughkeepsie, NY 12602
800-431-4610 / (914) 454-8200 / FAX (914) 454-8208
West Coast: 6205 Engle Way - Unit G - Gilroy, CA 95020
800-227-5884 / (408) 847-1233 / FAX (408) 847-1122

*Wire-O is a registered trademark of Standex International Corp.

Circle 134 on reader service card

HOW TO / INSIGHTS

the desktop level open the alias of the folder you want. It's as if you could jump from one branch of a tree to the roots and then to another branch without crawling up the trunk again.

If you find yourself frequently going back and forth between two folders, just put an alias of each folder in the other. You can then go from one to the other in a single step.

Removing Alias

The name the Finder constructs for an alias can be so long you won't be able to see it all in a list view (such as by name). To quickly remove the word *alias* and shorten the file name, first select the icon name for editing by clicking the name or by clicking the icon and pressing the enter or return key. Then press the right arrow or the down arrow to move the

insertion point to the end of the name, and press the delete key six times.

A second method works on the desktop or in a window viewed by icon or small icon, where you can see the whole icon name. Click the name once to select it for editing, pause briefly, double-click the last word of the name, and press the delete key twice. If you double-click too quickly after selecting the name, the Finder opens the alias instead of selecting the last word of the name (see the tip "Edit, Don't Open").

Folder Size Slowdown

The Calculate Folder Sizes option in the Views control panel can slow down the Mac when you're sharing someone else's files or accessing a file server. If you notice the network activity indicator flashing in the

continues

System 7 Step-Savers

Choosing Finder Shortcuts from the Finder's Help menu reveals more than two dozen keyboard shortcuts that go beyond the \mathbb{A} -key shortcuts listed in the Finder's menus.

Objective	Action
Switch to another open program and hide the current program's windows	Press option while clicking another program's window, choosing from the Application menu, or clicking the desktop
Expand the active window's entire outline (all folders)	Press \mathbb{A} -A and then press \mathbb{A} -option-right arrow
Collapse the active window's entire outline (all folders)	Press \mathbb{A} -A and then press \mathbb{A} -option-left arrow
Erase the floppy disk you're inserting	Press \mathbb{A} -option-tab at disk insert
Bypass the internal hard disk during start-up	Press delete-option- \mathbb{A} -shift
Force the active program to quit	Press \mathbb{A} -option-escape

Some Finder shortcuts also work in the directory dialog boxes you get when you use Open, Save, and other disk-related commands.

Objective	Action
Move from the name-entry box to the directory list and vice versa (in a Save dialog)	Press tab
Select an item to open	Type item's full or partial name
Open the selected item	Press \mathbb{A} -down arrow
Open the enclosing folder or disk	Press \mathbb{A} -up arrow or double-click
Go to the next disk or volume	Press \mathbb{A} -left arrow
Go to the previous disk or volume	Press \mathbb{A} -right arrow
Go to the desktop	Press \mathbb{A} -D or \mathbb{A} -shift-up arrow
Go to the original of the selected alias (instead of opening it)	Press option while clicking the Open button or while double-clicking the alias
Cancel the directory dialog box	Press escape or \mathbb{A} -Period (.)

Imagine getting twice the Bernoulli for two-thirds the price.

The new Bernoulli 90MB.



Welcome to the next generation of removable

storage, the new Bernoulli® 90 from Iomega®.

At 90 megabytes per removable disk, we've more than doubled our capacity. Yet the new Bernoulli 90 is actually less expensive than our own Bernoulli 44, as well as other removable-disk drives. A lot less. And a lot faster, too.

But the best part is, it's all Bernoulli. Rugged, reliable, endless storage—exactly what storage-intensive Macintosh users demand.

More value.

The new Bernoulli 90 is now considerably less expensive than other removable drives of similar capacity. Granted, competitive pricing alone doesn't necessarily mean value—so consider what

else you *don't* get with other removable-storage drives.

You don't get a new, 19-msec effective access time. You don't get a technology that frees you from head crashes, or removable disks that can stand 1,000Gs of shock.

You don't get a drive that's compatible with every major operating system, and workstations. And you don't get Central Point's MacTools Deluxe or Dantz's Retrospect software.

In short, you don't get a Bernoulli.

More recognition.

Leading publications have given us welcome recognition, but with a 98 percent satisfaction rate, our



Welcome to the 90s.

biggest supporters

are Bernoulli users.

Our users enjoy worldwide support and a 24-hour* drive replacement service. To further protect their investment, we've designed the Bernoulli 90 to read 44MB disks. And we're instituting an upgrade program to help get every Bernoulli user into the 90s.

Call 1-800-777-4197.†

Questions? We don't blame you. There's a lot more you should know about—like our free, 90MB disk offer, drive configurations, Bernoulli Technology®, and specific pricing. So we've prepared a free brochure that's yours with a phone call. Find out today what a welcome change Bernoulli can be. Before the 90s leave you behind.

IOMEGA®
Makers of Bernoulli





Let's Be Sure Our Children Grow Up Smart And Fit.

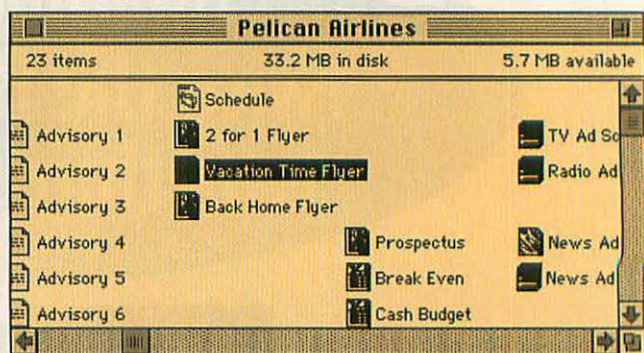
We know our children won't get very far in the world without a good, working knowledge of the "3 R's."

That's why school is such an important part of their lives. But there's another part of their education that's just as important to their future—physical education.

The healthy hearts they develop now will go a long way toward helping them grow into healthy adults. And the good fitness habits they learn can stay with them for a lifetime. So let's encourage our children to exercise their minds. But let's be sure they do the same for their bodies.



The President's Council on Physical Fitness and Sports



Find in Next Window Sometimes the Finder's Find Next command gets you bogged down in a window that contains many matches to what you specified in the Find command, but you know the window doesn't contain the item you want. To cancel searching in the active window and skip to the next folder that contains a match, close the window by clicking the close box or pressing ⌘-W. Then press ⌘-G to find again.

left corner of the menu bar and you're not actively using a shared item, the Finder may be getting folder sizes for volumes belonging to another Mac. (The Finder will even do this in the background while you work with another program.) To end the slowdown, either close the shared item's windows or turn off the Calculate Folder Sizes option.

Puzzle Pictures

The Puzzle desk accessory has two games, one in which you unscramble numbered tiles and another in which you unscramble a picture of the Apple logo or a pasted image you can add yourself. Choose Clear from the Edit menu to switch between them. You can replace the picture of the Apple logo by copying a picture in another program, switching to the Puzzle, and pasting.

Trash Everywhere

Are your Trash and hard drive icons inevitably covered by windows of other open programs? What a mess! Make aliases of the Trash and hard drive, put the aliases in a folder, and put the folder in your Apple menu for instant access. Leave that folder open, and its window will come to the front along with the other Finder windows when you select it from the Apple menu. If you're lucky enough to have two monitors, put a Trash alias on

the second monitor and you can use it just as you would the Trash. Beats dragging icons across two screens to throw them away.

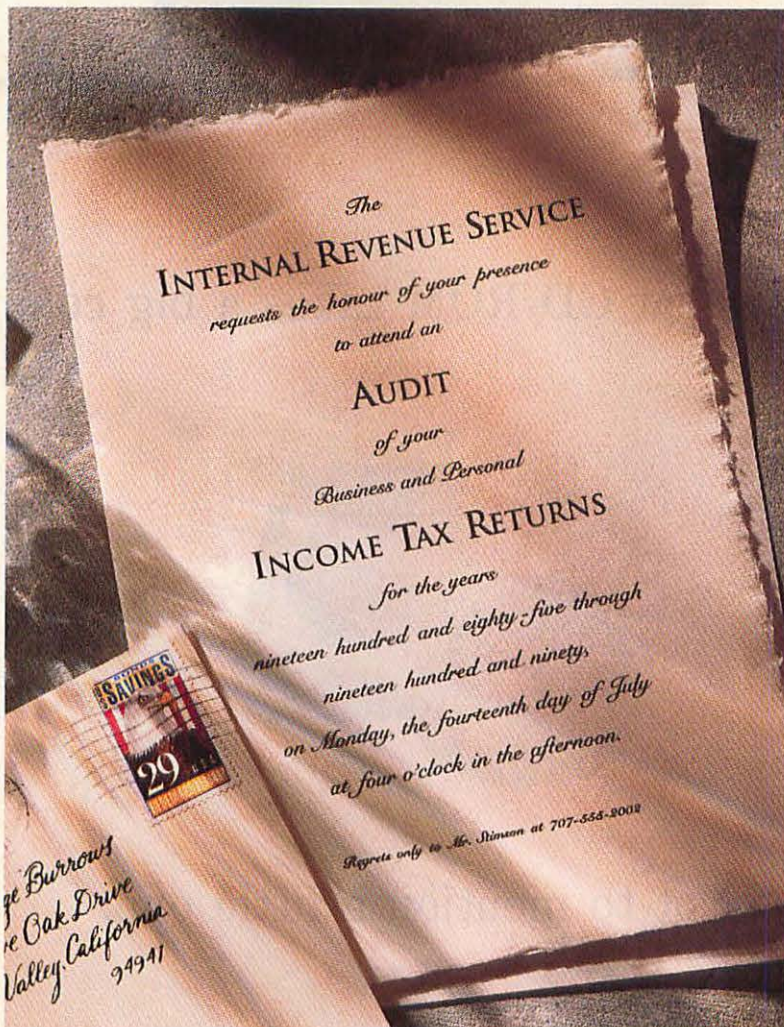
Secret Messages

Apple's system software engineers, true to their kind, have left a few Easter eggs in their work. For example, if you erase all text in the Labels control panel and restart, the Labels menu lists two names, presumably the authors. On a Mac that can run virtual memory, open the Memory control panel, turn on virtual memory, and press the option key while clicking the Hard Disk pop-up menu. Instead of a list of disks, you see the names of virtual memory's creators, along with some interesting "liner notes."

If your Mac can use the Monitors control panel, click on the version number in the upper right corner to see a smiley face and the authors' names. Repeatedly press the option key while holding the mouse button down to mix up the first names and randomly replace them with the words *Blue* and *Meanies*. (Blue Meanies are software engineers who work on system software as a whole, not solely on one aspect of it.) **m**

Contributing editor LON POOLE is the author of *Macworld Guide to System 7* (IDG Books Worldwide, 1991) and *Amazing Mac Facts* (Microsoft Press, 1991).

The Right Typeface Can Make Even
BAD NEWS
Look Good.



*I*f a typeface can
make a letter from the
IRS look inviting, think
what it can do for your
documents. Find out

for yourself with Adobe Type Set™ packages – computer
typefaces for Macintosh® and PC Windows.™ Adobe Type
Sets are specially selected typefaces designed to enhance all
your important business documents, including spreadsheets,

overheads, letters and faxes.
Each Adobe Type Set package
contains a selection of eight to
ten typefaces, plus the Adobe
Type Manager™ software for a

true picture of your type on-screen and on the printed page. Moreover,
Adobe Type Sets are easy to use and reasonably priced. For more
information, drop in at your nearest Adobe reseller or call Adobe:
1-800-833-6687. Ask for Dept. B, ext. 1228.








Now,
Multimedia
ready.



Being the best at CD-ROM takes a big commitment.



Not to mention a little one.

Whether we're coming up with big ideas, or small ones, NEC is always leading the way in CD-ROM.  Take our readers. We have a complete line. With everything from high performance desktop models to the first truly portable* CD-ROM reader. The Intersect™ CDR-35. A product PC Magazine called one of the best of 1990. And winner of Systems Integration product of the year. A piece of CD-ROM technology topped only by our portable CDR-36M.  What's more, our Intersect CDR-73M and CDR-83M drives have the fastest** data access rates in the business. In fact, with speeds of 280 milliseconds you might even be inclined to call them speed readers.  All this from NEC. Whose CD-ROM products are known for their high quality and reliability. So high that we're offering a two-year limited warranty on every new reader.  For product literature, or the nearest dealer location, call 1-800-NEC-INFO.  CD-ROM from NEC. Our commitment to excellence is big. No matter what size the product.

*Battery powered. Introduced \$395. **Based on published specifications of available drives from major manufacturers. 4/91 © 1992 NEC Technologies, Inc. Intersect is a trademark of NEC Technologies. PC Magazine is a registered trademark of Ziff Communications Co. PC Magazine, 5/15/91 issue, page 208, reprinted with permission.

Where to Buy

Products Featured in This Issue

EDITED BY SUZANNE COURTEAU

THIS LISTING PROVIDES COMPANIES AND PHONE NUMBERS FOR PRODUCTS MENTIONED IN THIS ISSUE.

Adobe Illustrator 3.0

Adobe Systems; 415/961-4400, 800/833-6687; fax 415/961-1158.

Aldus FreeHand

Aldus Corp.; 206/628-2320.

Aldus PageMaker

Aldus Corp.; 206/628-2320.

Aldus Personal Press

Silicon Beach Software; 619/695-6956; fax 619/695-7902.

Aldus Super 3D

Silicon Beach Software; 619/695-6956; fax 619/695-7902.

Alias Sketch

Alias Research; 416/362-9181; fax 416/362-0630.

BeagleWorks

Beagle Bros; 619/452-5500, 800/345-1750; fax 619/452-6374.

Bernoulli Dual 44

Omega Corp.; 801/778-1000, 800/456-5522; fax 801/778-3460.

Bernoulli Dual 90

Omega Corp.; 801/778-1000, 800/456-5522; fax 801/778-3460.

Bernoulli Portable 44

Omega Corp.; 801/778-1000, 800/456-5522; fax 801/778-3460.

Bernoulli

Transportable 44
Omega Corp.; 801/778-1000, 800/456-5522; fax 801/778-3460.

Bernoulli

Transportable 90
Omega Corp.; 801/778-1000, 800/456-5522; fax 801/778-3460.

CadMover

Kandu Software Corp.; 703/532-0213; fax 703/533-0291.

Capture

Mainstay; 818/991-6540; fax 818/991-4587.

cc:Mail Macintosh

Platform Pack
cc:Mail; 415/961-8800, 800/448-2500.

ClarisWorks

Claris Corp.; 408/727-8227.

DataPak

Mass Microsystems; 408/522-1200, 800/522-7979; fax 408/733-5499.

DesignCAD Macintosh

DesignCAD; 918/825-4848; fax 918/825-6359.

DesignStudio

Letraset USA; 201/845-6100, 800/343-8973; fax 201/845-4708.

DiskLock

Fifth Generation Systems; 504/291-7221, 800/873-4384; fax 504/295-3268.

ElectricImage

Animation System
Electric Image; 818/577-1627; fax 818/577-2426.

Exposure Pro

Baseline Publishing; 901/682-9676, 800/489-9678; fax 901/682-9691.

Flash-It

Shareware by Nobu Toge.

Folio 1

D'pik; 614/451-4372, 800/238-3749; fax 614/451-5899.

Form Z

Autodesk; 614/488-9777; fax 614/488-0848.

FrameMaker

Frame Technology; 408/433-3311, 800/843-7263; fax 408/433-1928.

GreatWorks

Symantec Corp.; 408/253-9600, 800/441-7234; fax 408/252-4694.

hammerDisk44

FWB; 415/474-8055; fax 415/775-2125.

hammerDisk88

FWB; 415/474-8055; fax 415/775-2125.

HandiWorks

MacVok West; 408/973-7100; fax 408/973-7104.

Hard Disk Toolkit

FWB; 415/474-8055; fax 415/775-2125.

Image Grabber

Sebastian Software; 206/861-0602.

InBox Plus for

Macintosh
Silka; 510/769-9669, 800/445-8677; fax 510/769-8771.

Infini-D

Specular International; 413/549-7600; fax 413/549-1531.

Infinity40

PLI; 510/657-2211, 800/288-8754.

Interleaf Publisher

Interleaf; 617/290-0710; fax 617/290-4943.

JAG

Ray Dream; 415/960-0765; fax 415/960-1198.

MacRenderMan

Pixar; 510/236-4000, 800/937-4927; fax 510/236-0388.

MacroMind Three-D

MacroMind/Paracomp; 415/442-0200; fax 415/442-0190.

MacTOPAS

AT&T Graphics Software Labs; 317/844-4364; fax 317/575-0649.

MaxPage

Applied Systems and Technologies; 315/675-8584.

Microsoft Mail

Microsoft Corp.; 206/882-8080, 800/426-9400; fax 206/883-8101.

Microsoft Works

Microsoft Corp.; 206/882-8080, 800/426-9400; fax 206/883-8101.

Microtech R50

Microtech International; 203/468-6223, 800/626-4276; fax 203/468-6466.

MR-45

MicroNet Technology; 714/837-6033; fax 714/837-1164.

MR-90

MicroNet Technology; 714/837-6033; fax 714/837-1164.

Multi-Ad Creator

Multi-Ad Services; 309/692-1530, 800/447-1950; fax 309/692-5444.

NuSprint

Yarc Systems; 805/499-9444; fax 805/499-4048.

PICTuresque

Shareware by Tim Herzog.

Presenter Professional

VIDI; 818/918-8834; fax 818/918-9935.

Publish It Easy

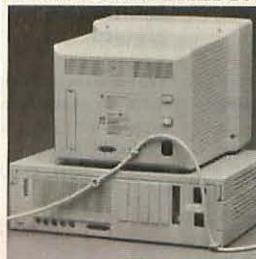
Timeworks; 708/559-1300; fax 708/559-1399.

continues

MACINTOSH SECURITY PRODUCTS

COMPLETE LINE OF PROVEN AND EASY TO INSTALL SECURITY PRODUCTS FOR MACINTOSH COMPUTERS.

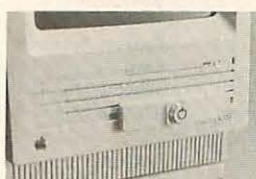
PREVENT COMPUTER THEFT!



MacKablit™ Security System

This system allows you to secure all your computer components: CPU, monitor, keyboard, printer. **Internal component security:** Kablit fasteners secure the rear panel of CPU protecting internal boards and hard drives. Fasteners available for all applications. List price \$39.95.

ACCESS SECURITY



Disk Drive Lock™

Prevent anyone from copying your data. Protect your data from harmful viruses. Prevent unauthorized use of your drive. Installs easily and quickly. Models available for all Macintosh models (except Mac Plus). List price \$24.95.

Order your free catalog of these and many other security products. Purchase orders accepted. Quantity pricing available. Shipping not included. MC/VISA accepted. Dealer inquiries invited.

Secure-It, Inc.

18 Maple Court
East Longmeadow, MA 01028

1-800-451-7592

Circle 239 on reader service card.



MAC SCITECH

At Last ... A Science & Engineering Conference for Macintosh Users

MACSciTECH's SEAM'92

January 15-17, 1992
Sir Francis Drake Hotel
San Francisco, CA

Join us for the first annual Conference on Scientific & Engineering Applications of the Macintosh (SEAM '92). Overlapping with the last day of MacWorld on Wednesday, January 15, SEAM '92 is a forum for exchanging practical information on the use of Macintosh computers in scientific and engineering applications.

- ◆ Keynote by Dr. Clifford Stoll, author of *The Cuckoo's Egg*
- ◆ 18 Technical Sessions — over 60 user papers on Molecular Biology, Symbolic Math, Design for Manufacture & Assembly, Data Acquisition & Control, and more
- ◆ Lively Panel Discussions
- ◆ In-depth Short Courses — digital signal processing, visualization, networking & communications, and more

Call MacSciTech, the Macintosh Scientific & Technical Users Assoc., for registration details.

MacSciTech
49 Midgley Lane
Worcester, MA 01604
(508) 755-5242
Fax (508) 795-1636
ALink: cons.lab.mfg
AOL: SciTechMac

Circle 64 on reader service card.

QuarkXPress

Quark; 303/934-2211, 800/356-9363; fax 303/377-6327.

QuickMail

CE Software; 515/224-1995, 800/523-7638; fax 515/224-4534.

QuickTools

Advanced Software; 408/733-0745, 800/346-5392; fax 408/733-2335.

RagTime III

MacVok West; 408/973-7100; fax 408/973-7104.

Ray Dream Designer

Ray Dream; 415/960-0765; fax 415/960-1198.

ReadySetGo

Letraset USA; 201/845-6100, 800/343-8973; fax 201/845-4708.

Relax Mobile 44

Vista

Relax Technology; 415/471-6112; fax 415/471-6267.

Relax Mobile 88 Vista

Relax Technology; 415/471-6112; fax 415/471-6267.

ScreenShot

Baseline Publishing; 901/682-9676, 800/489-9678; fax 901/682-9691.

Byte by Byte Corp.; 512/795-0150; fax 512/795-0021.

Sculpt 4D

Byte by Byte Corp.; 512/795-0150; fax 512/795-0021.

Showplace

Pixar; 510/236-4000, 800/937-4927; fax 510/236-0388.

Snap

Shareware by Knowledge Source.

SnapJot

Wildflower Software; 708/916-9360; fax 708/916-0883.

StrataVision 3D

Strata; 801/628-5218, 800/678-7282; fax 801/628-9756.

StyleWriter

Apple Computer; 408/996-1010.

Swivel 3D Pro

MacroMind/Paracomp; 415/442-0200; fax 415/442-0190.

TOPS

Sitka; 510/769-9669, 800/445-8677; fax 510/769-8771.

UltraDrive 50R

CCC Technologies; 617/890-0880, 800/422-7777; fax 617/890-0822.

Ventura Publisher, Macintosh Edition

Ventura Software; 619/673-0172, 800/822-8221; fax 619/673-7777.

VG Shaders + VG Looks

The Valis Group; 510/236-4124; fax 510/236-0388.

WordPerfect Office 3.01 for Macintosh

WordPerfect Corp.; 801/225-5000, 800/321-4566; fax 801/222-5077.

DIGITAL DATA

Apple Computer

408/996-1010.

Cypress Research Corp.

408/752-2700; fax 408/752-2735.

Engage Communication

408/688-1021; fax 408/688-1421.

Farallon Computing

510/596-9100; fax 510/596-9020.

The FreeSoft Co.

412/846-2700; fax 412/847-4436.

Fujitsu Network Switching

800/228-4736.

Group Technologies

703/528-1555, 800/476-8781; fax 703/528-3296.

Hayes Microcomputer Products

415/974-5544.

International Transware

415/968-8888, 800/999-6387; fax 415/324-2020.

Northern Telecom

919/992-5000, 800/667-8437.

Shiva Corp.

617/252-6300, 800/458-3550; fax 617/252-6852.

Software Ventures Corp.

510/644-3232; fax 510/848-0885.

Solana Electronics

619/490-5050; fax 619/490-5055.

Synergy Software

215/779-0522; fax 215/370-0548.

Telrad Telecommunications

516/921-8300.

TextureSynth

Pantechon; 408/427-1687.

UDS/Motorola

205/430-8000, 800/631-4869.

Wraptures

Form and Function; 415/664-4010, 800/843-9497; fax 415/664-4030.

DTP UTILITIES

Agfa Corp.

508/658-5600, 800/822-5524; fax 508/658-6285.

Aldus Corp.

206/628-2320.

Altura Software

408/655-8005; fax 408/655-9663.

Baseview Products

313/662-5800; fax 313/662-5204.

Cheshire Group

707/887-7510; fax 707/887-2595.

Compumation

814/238-2120; fax 814/234-6864.

Computer Friends

503/626-2291, 800/547-3303; fax 503/643-5379.

Corder Associates

602/993-8914; fax 602/993-6924.

David King & Associates

619/488-8118; fax 619/488-4021.

DataStream Imaging Systems

606/255-6686; fax 606/259-1541.

EDCO Services

813/962-7800, 800/523-8973; fax 813/960-2356.

ElseWare Corp.

206/547-9623; fax 206/632-7255.

Integrated Software

212/545-0110; fax 212/545-0198.

John Juliano

Computer Services

404/321-3037; fax 404/633-9720.

KyTek

603/529-2512; fax 603/529-2015.

Letraset USA

201/845-6100, 800/343-8973; fax 201/845-4708.

Liberty Engraving Company

312/786-0600; fax 312/786-9422.

See us at Macworld Expo Booth # 534, Moscone Center

Fast Food For

Start with any 35 mm image - color transparency, color negative, black-and-white positive or negative.

Hungry for the impact only photographic images can give your desktop presentations or graphic design?

Your order's ready.

Scan any 35 mm image

into your Apple

Macintosh II

computer

in as fast as

18 seconds.*

Then modify

or enhance your

image. Add text

and graphics using

Introducing the KODAK 35 mm Rapid Film Scanner



See what Kodak's serving up now. Desktop color imaging!



popular image manipulation and presentation software. Output to a film recorder, thermal printer or save to diskette.

That's not all. Thanks to Kodak's exclusive image compression software, you can store up to 300 images on a single 80 MB hard drive. Or transmit your compressed image in extremely short order. Four minutes or less!**

*Using a Macintosh IIfx computer.

**Speed depends on phone-line quality, modem use, and image complexity.

**Managing Editor
Software**

215/635-5074; fax
215/635-5046.
Mastersoft
602/277-0900, 800/624-
6107; fax 602/970-0706.
Mycro-Tek
316/636-5000, 800/765-
5001; fax 316/636-5007.

**North Atlantic
Publishing Systems**

508/250-8080; fax
508/250-8179.
Npath
914/657-2748, 800/826-
7284; fax 914/657-2748.

Prepress Technologies

619/931-2695, 800/669-
8692; fax 619/931-2698.

**Professional
Computer Center**

215/860-4530; fax
215/860-2646.
**Publishing Revenue
Partners**
416/538-8730.

SGAUA

615/366-1798,
800/858-0489.

**Software Consulting
Services**

215/837-8484; fax
215/837-8080.

Symantec Corp.

408/253-9600, 800/441-

7234; fax 408/252-4694.

**Synaptic Micro
Solutions**

414/734-6535,
800/526-6547; fax
414/734-8003.

Virginia Systems

804/739-3200; fax
804/739-8376.

XChange

415/864-7592; fax
415/864-7594.

**MIDRANGE
HARD DRIVES**

APS

816/478-8300, 800/233-
7550; fax 816/478-4596.

Casa Blanca Works

415/461-2227; fax
415/461-2249.

CD Technology

408/752-8500; fax
408/752-8501.

Club Mac

714/768-1490, 800/258-
2622; fax 714/768-7307.

CMS Enhancements

714/222-6000; fax
714/549-4004.

Core International

407/997-6033; fax
407/997-6202.

Cutting Edge

307/789-0582; fax

307/789-8516.

Deltaic Systems

408/441-1240, 800/745-
1240; fax 408/441-8343.

DJK Development

313/795-3472; fax
313/795-9515.

Ehman

307/789-3830, 800/257-
1666; fax 307/789-4656.

ETC Peripherals

813/884-2863; fax
813/888-9535.

FWB

415/474-8055; fax
415/775-2125.

GCC Technologies

617/890-0880, 800/422-
7777; fax 617/890-0822.

Golden Triangle

Computers
619/279-2100; fax
619/279-1069.

Hard Drives

International
602/350-1128, 800/234-
3475; fax 602/829-9193.

La Cie

503/691-0771, 800/999-
0143; fax 503/691-5590.

Liberty Systems

408/983-1127; fax
408/243-2885.

MacProducts USA

512/472-8881, 800/
622-3475; fax

512/499-0888.

**MacTel Technology
Corp.**

512/451-2600,
800/950-8411;
fax 512/451-3323.

Mass Microsystems

408/522-1200, 800/522-
7979; fax 408/733-5499.

MicroNet Technology

714/837-6033; fax
714/837-1164.

Microtech

International
203/468-6223,
800/626-4276; fax
203/468-6466.

Mirror Technologies

612/633-4450, 800/654-
5294; fax 612/633-3136.

**Optima Technology
Corp.**

714/476-0515; fax
714/476-0613.

**Peripheral Vision
Storage**

800/800-7868; fax
215/232-9809.

PLI

510/657-2211,
800/288-8754.

Procom Technology

714/549-9449; fax
714/549-0527.

Relax Technology

415/471-6112; fax
415/471-6267.

Rodime Systems

407/391-7333.

Storage Dimensions

408/954-0710; fax
408/944-1200.

**Third Wave
Computing**

512/832-8282,
800/284-0486.

Total Peripherals

508/480-9042; fax
508/480-8207.

**QUICKTIME
TOOLS**

Adobe Systems

415/961-4400, 800/833-
6687; fax 415/961-1158.

Apple Computer

408/996-1010.

CoSA

401/831-2672.

Digital F/X

415/961-2800, 800/955-
8273; fax 415/961-6990.

DiVA

617/491-2010; fax
617/491-2208.

Letraset USA

201/845-6100, 800/343-

8973; fax 201/845-4708.

NEC Technologies

508/264-8000,
800/632-4636.

New Video Corp.

310/396-4000; fax
310/396-0282.

RasterOps Corp.

408/562-4200, 800/729-
2656; fax 408/986-8947.

Storm Technology

415/691-1111; fax
415/691-9825.

SuperMac Technology

408/245-2202; fax
408/735-7250. **m**

Public domain software, freeware, and shareware are available through online information services; user groups (call 800/538-9696 ext. 500 for information on a local user group); or mail-order clearinghouses such as Educorp (800/843-9497, 619/536-9999), or the Public Domain Exchange (800/331-8125, 408/496-0624 in California).

Your

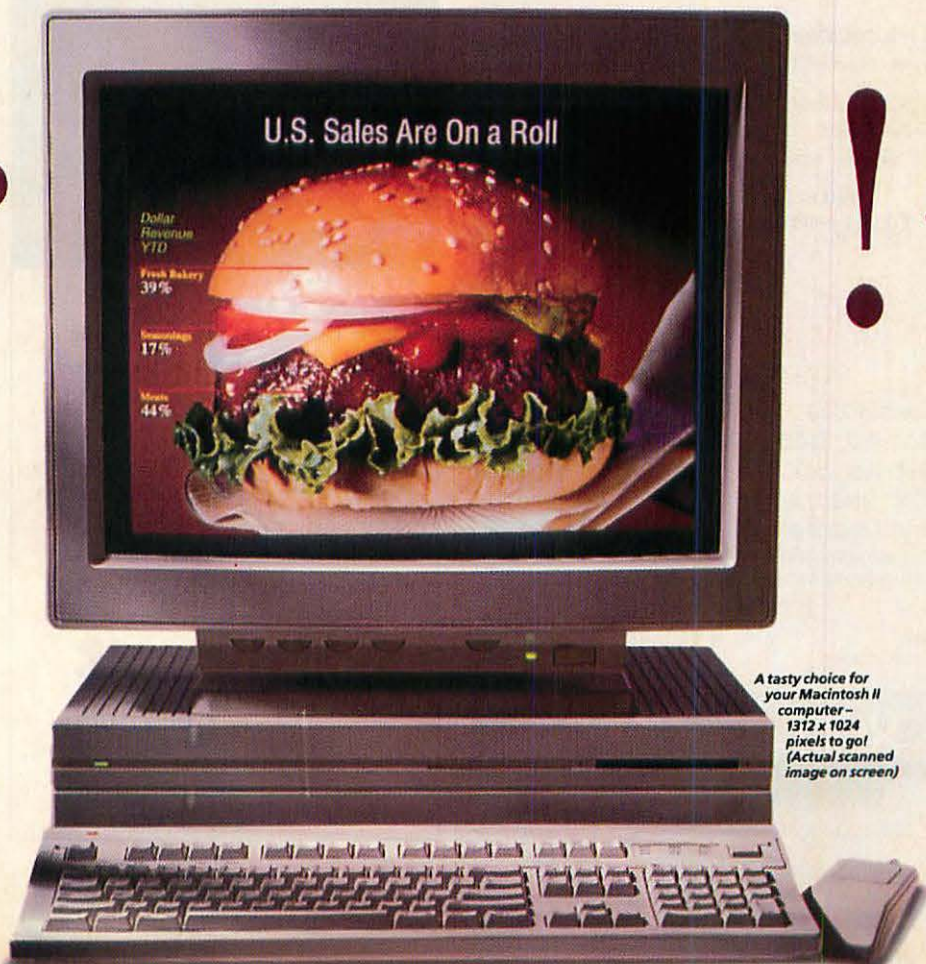
Satisfy your appetite for more creative imaging options. Call today for details on the KODAK 35 mm Rapid Film Scanner and the name of the dealer nearest you.

**1-800-44 KODAK
Ext. 870**

Now you'll see some sizzle!



Check out the output menu: Get a 35 mm slide via film recorder or hard copy on a thermal printer. Or modem your image to a remote location.



A tasty choice for your Macintosh II computer - 1312 x 1024 pixels to go! (Actual scanned image on screen)



PROFESSIONAL
PHOTOGRAPHY DIVISION

Circle 186 on reader service card.

Mac News

For Product, Price & Delivery—We've Got the Scoop!

Pick a microLaser

**TEXAS
INSTRUMENTS**

AppleTalk interface & FREE Paper Tray Management Software included on all models!



TI microLaser Plus PS/17 **\$1,249**

9 ppm output, 300 dpi, 17 PostScript fonts

TI microLaser Plus PS/35 **\$1,565**

9 ppm output, 300 dpi, 35 PostScript fonts

TI microLaser XL PS/17 **\$2,425**

16 ppm output, 300 dpi, 17 PostScript fonts
35 PostScript version also available

**We carry the full line of
Texas Instrument Laser Printers**

Pick a Mac!

All Configurations Available

Classic 2/40 **\$1,099**

Mac IIsx, 3/40 **Call**

Mac IICx, 5/0 **Call**

Mac Quadra 700, 4/0 **\$4,295**

Mac Quadra 900, 4/0 **\$5,495**

Sometimes publication deadlines don't allow us to advertise our latest price. So call for latest details!

Visa
MasterCard

Authorized
Printer Dealer

1-800-243-9383

24 HR FAX 312-871-4556

1555 SHERMAN AVE • SUITE 361 • EVANSTON, IL 60201

Prices subject to change without notice. All warranties on Macintosh or Apple brand products sold by MacNews will be honored by MacNews or its authorized agents only. All other manufacturer's warranties still apply.

Circle 69 on reader service card

YEAR IN REVIEW

CREDITS AND SOURCES—Year in Review

Page 228

Apple ad with IBM Headquarters—Apple/
BBDO. Source: San Jose Mercury News
Sculley and Kuehler—Scott Sommerdorf/San
Francisco Chronicle
Sculley as Quirky Loner—Source: New York
Times
Top Ten Legal Actions illustrations—Ward
Schumaker
Toshiba ad—Source: Toshiba America

Page 229

Computer layoffs chart: Arne Hurty
Silicon Bully—Business Month/Inc. Magazine
Nathan Schulhof—Drake Sorey
Sculley with PowerBook—AP/Wide World
Siskel & Ebert interview—Source: Playboy
Magazine and © Buena Vista Television
Siskel & Ebert photo—Buena Vista Television
Machandwriter—Communication Intelligence
Corp.
IBM-Tainted Apple cartoon—Source: Oakland
Tribune
Mac-Designed Sweater—Source: Wall Street
Journal/Permission Cartoon Features
Syndicate
Dennis the Menace—Source: Hank Ketcham
and © North America Syndicate

Page 230

Computer Millionaires—Source: Forbes
Magazine
Customer Support illustration: Ward Schu-
maker
Just Plain Bugs photo—Rosemary Wilton
Monkey at Jasmine booth—Gerry Gropp
Martin Marietta ad—Martin Marietta/Gray
Kirk VanSant
Picketers—Gerry Gropp

Page 231

Sculley in Japan—AP/Wide World
System 7 brochure—Source: Apple Computer
Stock Sellers chart—Arne Hurty
Kahn on motorcycle—Torin Boyd (for
US News & World Report)
Kahn sailing—Jean-Pierre Thomas
Kahn with saxophone—Chuck Gathard

Page 232

Group of oinkers—Source: San Jose
Mercury News
Sony-Apple announcement—Source:
Wall Street Journal
What happened to 1-2-3—Source: San
Francisco Chronicle
Some confusion—Source: InfoWorld
Do more, work less—Source: Apple Computer
Microsoft threats—Source: InfoWorld
Profit Report—Source: San Jose Mercury News
Press Release Euphemisms—Source: Apple
Computer
System 7 article—Time Magazine, San Fran-
cisco Chronicle, San Jose Mercury News

Page 233

Francis Ford Coppola—Source: KQED,
San Francisco
Thousand points of light—Source: Nitrate Films
Star Tech—Source: Apple Computer
Yuppie puppy dog care—Source: NBC
The power to crush other kids—Source: NBC
LC in Video Award—Source: NBC
Pedagogue as demagogue—Source: BBDO
Classical Mac—Source: WGBH, Boston
Dad's a psycho—Source: Kindergarten Cop
A Mac user—Source: Columbia Records Video



PRISTINE RAIN FOREST
very secluded, lots of exposed
wood, plenty of shade, prime southern
exposure, available immediately.

© David Muench 1991

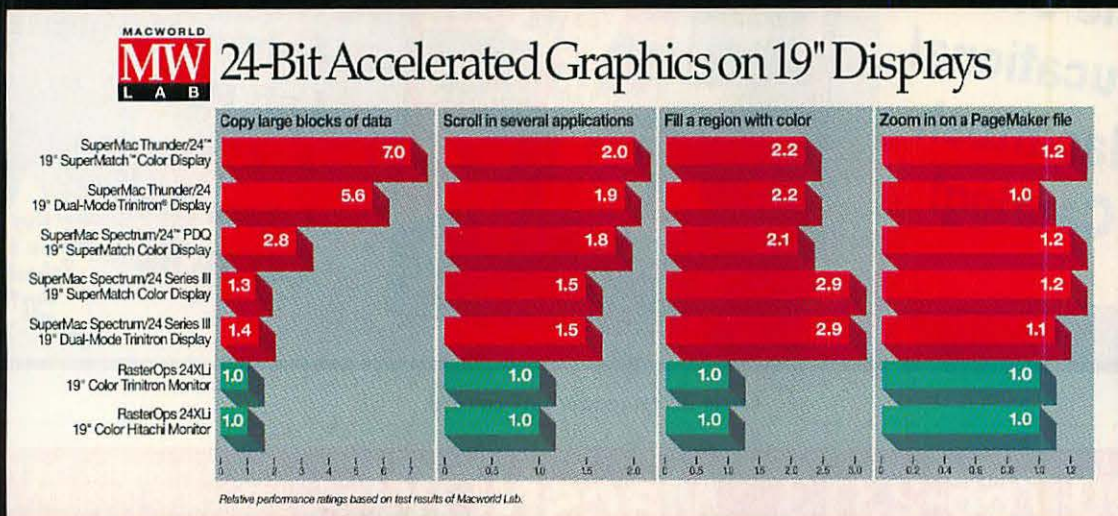
Prime Real Estate. For years, The Nature Conservancy has purchased large tracts of it so that endangered species can flourish there. Now, as partners in the public television series Nature, we're helping provide another place where wildlife can flourish. To learn more about these and all of our activities, call 1-800-628-6860.

NATURE &

The
Nature
Conservancy

Nature appears Sundays
on PBS

Macworld Magazine Rates SuperMac Number 1, 2, 3, 4, and 5!



The 1991 Macworld Lab test results on 24-bit color display systems are in. Out of the fifteen 19" color display systems tested SuperMac™ swept the top five places. And out of the six 21" color display systems, SuperMac captured the top two places. But SuperMac's boards and monitors were not just marginally faster—even our lowest-cost Spectrum/24 Series III outperformed its more expensive competitors.

Macworld just confirmed what SuperMac's customers have known all along—our systems squeeze every ounce of performance out of QuarkXPress, Adobe Photoshop™ and Illustrator™, Aldus PageMaker and Freehand, and other leading programs. The result: Macintosh systems with workstation class performance.

So get SuperMac for top speed. But don't just take our word for it, to get a full copy of the Macworld report call 1-800-334-3005.

*"Editor's Choice:
... get a SuperMac 21" SuperMatch Two-Page
Color Display with a Spectrum/24 PDQ board,
or better yet, the super-fast Thunder/24.
The color on these systems
is beautiful, the text is crisp ..."*
Macworld Magazine

SUPERMAC™
The SuperSource for Color

**See us at Macworld Expo
Booth # 1017 Moscone Center**

© 1991 SuperMac Technology. All rights reserved. SuperMac, SuperMac Thunder/24, SuperMatch, and Spectrum/24 are trademarks of SuperMac Technology. Trinitron is a registered trademark of Sony Corporation. QuarkXPress is a registered trademark of Quark, Inc. Adobe, Photoshop, and Illustrator are trademarks of Adobe Systems Incorporated. Macintosh is a registered trademark of Apple Computer, Inc. All other brand or product names are trademarks of their respective holders.

Circle 132 on reader service card

EDUCATIONAL

YOUR SINGLE SOURCE SUPPLIER FOR COMPUTER SOFTWARE ■ DISKETTES ■ ACCESSORIES

RESOURCES™**USA/Canada
800-624-2926****In Illinois Call
708-888-8300****America's LARGEST Supplier of Educational Technology!****Call Now For
The ONLY
Educational
Macintosh
Catalog!****FREE**✓ **Educational Software**✓ **Consumer Versions**✓ **School Versions**✓ **Lab Packs**✓ **Accessories**✓ **LaserDisc**✓ **CD-ROM****Buy
Where the
Schools
Buy!**

Circle 28 on reader service card.

800 766-2313 MacsNOW

For fast quotes, fax your request to (512) 837-2609. We welcome foreign orders.

For the Best Price on your Custom Package or on over 3000 Macintosh Products, call our knowledgeable staff.**All systems are ready to run, including all cables and connectors, Mouse, SuperDrive, HyperCard, 5-1.44mb Diskettes with case, Mouse Pad, 6 Outlet Electronic Surge Protector, Game, Utility, Educational, Business, Graphic and Virus Protection Software!****Mac Classic**2 megabytes of RAM, 40 megabyte Hard Drive system. **\$1,129**
4 megabytes of RAM, 40 megabyte Hard Drive system. **\$1,199****Mac Classic II**

Call for prices and availability on all configurations of the Classic II.

Mac LC2 megabytes of RAM, 40 megabyte Hard Drive, Standard Keyboard, 14" High Resolution Color Monitor.
System Price **\$1,999**
4/40 System **\$2,079**
4/105 System **\$2,399****Mac IIsi**3 megabytes of RAM, 40 megabyte Hard Drive, Extended Keyboard, 14" High Resolution Color Monitor.
System Price **\$2,599**
5/105 System **\$2,979**
9/105 System **\$3,199****Mac IICI**5 megabytes of RAM, 105 megabyte Hard Drive, Extended Keyboard, 14" High Resolution Color Monitor.
System Price **\$3,799**
8/180 System **\$4,249****We now stock
E-Machine Monitors.****Mac IIfx**4 megabytes of RAM, 105 megabyte Hard Drive, Extended Keyboard, 24 bit Video, 14" High Resolution Color Monitor.
System Price **\$5,499**
8/180 System **\$5,999****New Macs!**

Call for prices and availability on all the new Macs.

Quadra 700 **Call**
Quadra 900 **Call**
PowerBook 100 **Call**
PowerBook 140 **Call**
PowerBook 170 **Call**

MacsNOW keeps advertised systems in stock. Most orders placed before noon central standard time, will be shipped same day.

**Call 800 766-2313 for
Free Technical Support****If you find a lower price,
Please call us.**8am - 8pm CST Weekdays
10am - 5pm CST Saturday**MacsNOW**9705 Burnet Road, Suite 201
Austin, Texas 78758
(512) 837-9722
FAX (512) 837-2609

Terms: American Express, Visa, MasterCard, Cashiers Check and COD accepted. Returns require an RMA #. All returned or refused orders will be charged a minimum 15% restocking fee. Prices do not include shipping and are subject to change.

**YOU WANTED YOUR MAC YESTERDAY.....CALL MacsNOW TODAY!
MOST SYSTEMS SHIPPED SAME DAY**

Circle 171 on reader service card

MAC DIRECT

Specialists in Mac Storage

Hitachi Special!

- Hitachi 420MB Int.\$998
- Hitachi 1.6 Gig Int.\$2798
- 5 Year Warranty
- 150,000 Hrs MTBF
- 12 to 14ms access time!
- Incredibly Reliable!
- Perfect for the Power User



- All 3.5" Drives are available in zero footprint (including a 40 watt power supply, and dual AC outlets), or micro cabinets as well as internal for all Mac's.
- All 5.25" Drives are available in zero footprint external (including a 65 watt power supply, cables, and ext. terminators) or as internals for the Mac II, IIfx, and IIfx.

Fujitsu Drives

		Internal	External
45 MB	3.5" Low Profile/Low Power3yr warr, 50,000MTBF	\$188	\$248
90 MB	3.5"3yr warr, 50,000 MTBF	\$298	\$368
135 MB	3.5"3yr warr, 50,000 MTBF	\$378	\$448
185 MB	3.5"3yr warr, 50,000 MTBF	\$498	\$568
330 MB	3.5" 5 yr warr., 200,000 MTBF*, 9ms Access	\$1148	\$1248
425 MB	3.5" 5 yr warr., 200,000 MTBF*, 9ms Access	\$1248	\$1348
520 MB	3.5" 5 yr warr., 200,000 MTBF*, 9ms Access	\$1348	\$1448
680 MB	5.25" 16ms 5 yr warr., 200,000 MTBF*	\$1288	\$1388
1.2 Gig	5.25" 1.5ms 5 yr warr., 200,000 MTBF* (MacWorlds Fastest Gig!)	\$1988	\$2088

Hitachi Drives

		Internal	External
425 MB	3.5" 5 yr warranty 13ms 150,000 MTBF*	\$998	\$1098
1.6 Gig	5.25" 5 yr warranty 12ms 150,000 MTBF*	\$2798	\$2898

* Mean Time Between Failure is the average life expectancy of a drive.

DAT Tape Backup

- WangDat 2.1 Gig Capability\$1498
- ArDat 2.1 Gig Capability.....\$1398
- Up to 10 mb per minute backup time
- Includes SoftBackup II for Fast network and

SyQuest 44MB & 88MB Removables

- 44MB Removable\$448.00
- 88MB Removable\$648.00
- 19ms Access time
- Both Drives include Cartridge
- Dual AC Outlets, 40 Watt power supply



800 K Floppy Drive \$99

- Fujitsu 800k.....\$99.00!
- One year warranty
- Completely compatible
- Looks great!

CD ROM Drives

- Toshiba 3301.....\$568
- Includes driver CD carrier and cables
- 325ms access time
- MacWorld and MacUsers Highest Rated CD-ROM!
- Chinon CDC-431\$598
- Includes driver CD carrier and cables,
- 350ms access time, includes 12 function audio remote control

Sharp 35 Font Laser Printer

Sharp 35 Font Postscript Printer\$1298

- 6 pages per minute, 300DPI
- Includes Appletalk interface!
- 35 Adobe Postscript Fonts
- Letter legal and transparencies
- 1.5mb memory
- Sharp is the manufacturer of the TI Microlaser engine

Quantum Drives

	Internal	External
Q 52 MB 3.5" LPS.....	\$248	\$338
Q 105 MB 3.5" LPs.....	\$368	\$448
Q 120 MB 3.5".....	\$448	\$548
Q 170 MB 3.5".....	\$598	\$688
Q 210 MB 3.5".....	\$688	\$748
Q 425 MB 3.5".....	\$1298	\$1398



14" Monitors!

- 14" GoldStar Color.....\$388
- 14" NEC Color\$438
- 14" Sony Trinitron.....\$498

The GoldStar 14" is plug compatible with IIsi, CI and the LC.
The NEC Macsync is plug compatible with IIsi, CI.
The Sony 1320 is plug compatible with the LC.

19" Monitors!

20" Philips Color System

- w/RasterOps 8Bit.....\$1498
- W/National Semi. 24Bit.....\$2298

19" Ikegami Trinitron Color

- w/RasterOps 8Bit.....\$2398
- W/Natl. Semi. 24Bit.....\$3198

19" Ikegami Grey Scale System

- W/RasterOps 8Bit.....\$1098

All monitor systems except NEC & GoldStar 14" include interface board and cable.



60 East Chestnut - 145, Chicago, IL 60611

Visa, Mastercard, Amex, COD, Telecheck Approved Checks, Gov., Corp., Univ., P.O.s welcome All new Drives, Preformatted with latest stable system software, Factory warranty, Bracket, cables and software included/30 Day Money back Guarantee on all drive products. Prices, terms and availability subject to change without notice

Circle 140 on reader service card

800-621-8467

Hours: 8:30 - 8:00 CST, Saturdays 10:00 - 4:00
Technical Service and Order
Tracking call: 312-664-8225



Experience the ultimate multimedia adventure

PREREGISTER FOR
MEDIA '92

February 26-28/Conferences February 27-28/Expo Los Angeles Convention Center

You

won't believe

what you can see

what you can do

what you will learn

The most important multimedia expo and conference in the world will premier in February at the L.A. Convention Center. But there's one thing you need to do immediately – preregister before February 1. Not only will you save \$10 to \$100, you'll also save time.

MEDIA '92 is an exhaustive and unbiased source for new information on all the multivendor hardware, software, services and projects available to the multimedia user and developer. In the exhibition center, you can experience the most exciting and significant products available now and on the horizon. Attend one of the two conference series and you will see the future of multimedia in a multiplatform environment with offerings for Macintosh, DOS, UNIX, OS/2, Amiga, and other workstations. There will be hands-on demonstrations and breaking information you can't find anywhere else. MEDIA '92 is sponsored by *Macworld* magazine, in association with *Micro Publishing News* and *Verbum*.

MEDIA '92

TWO CONFERENCE SERIES

The two MEDIA '92 conference series are designed for two levels so you can get the information you need most.

Multimedia: Maximum Power for Maximum Payback

*An Intensive Conference
for the Serious Media Professional*

February 26, 1:30 p.m. to 5:30 p.m.
February 27-28, 8:30 a.m. to 5:00 p.m.

For: *Developers, Videographers, Graphic Designers, Producers, Advertising Agencies, Production Houses, Communication Specialists, Artists, Animators, Musicians*

News The latest high- and low-end multimedia product information worldwide.

Vendors What's hot, what's not, what's next.

Results Insider techniques for achieving your goals and getting maximum power from your current multimedia configuration.

Trends An informed perspective on the key issues in multimedia today. Includes crossplatform standards development, videoconferencing, the major players and the coming impact of multimedia networking.

Case Studies Award-winning multimedia projects, how they were created, how their developers succeeded.

Investments Making the right choices in a fast changing environment.

Networking Meet multimedia leaders from around the world to exchange ideas and gain invaluable insights.

Multimedia Magic on a Shoestring

*For the Small-scale User
Seeking Basic Information*

February 27-28, 10:00 a.m. to 5:00 p.m.

For: *Advertising and Graphic Users, Educators and Training Specialists, Sales and Marketing, Science and Engineering Users, Entrepreneurs, Small Scale Production Services*

Savings The ultimate information source on low-cost multimedia tools from all the vendors in the marketplace.

How To Start creating your own low-cost multimedia presentations.

Demonstrations Examples of the best low-cost multimedia presentations in the world.

Breakthroughs The latest multimedia technologies in plain English: CD-ROM, artificial intelligence, hypermedia, DVI compression, CD-I and more.

Applications Understanding classic and new uses of multimedia as a productivity tool for every desktop.

Users Forum Specific applications of multimedia to your own situation and needs.

Preregister
today
and
save \$10. to \$100.

The Multimedia Theater

Continuous showings of the best and the brightest multimedia presentations from around the world. You'll better understand the tactics behind the technologies when you see the innovations pushing multimedia to the ultimate extreme.

Letting There Save 5% to 45% when you fly American Airlines, the official airline for MEDIA '92. Make your reservations by calling 1-800-433-1790 and ask for Star File #S-0222AL.

You'll also receive special discounts when you rent a car from Avis. Just call 1-800-331-1600 and ask for Worldwide discount #B464351.

Hotels Rooms are priced for single and double occupancy.

Holiday Inn Convention Center 1020 S. Figueroa St., Los Angeles, 213-748-1291 \$82/\$82
Los Angeles Hilton & Towers 930 Wilshire Boulevard, Los Angeles, 213-612-3921 \$115/\$130
Los Angeles Hyatt 711 S. Hope Street, Los Angeles, 213-683-1234 \$115/\$130

Registration Hours

February 26, 12:30 p.m. to 5:30 p.m.
 February 27-28, 8:00 a.m. to 5:00 p.m.

Conferences

Multimedia: Maximum Power for Maximum Payback

February 26, 1:30 p.m. to 5:30 p.m.
 February 27-28, 8:30 a.m. to 5:00 p.m.
 Before February 1, \$595.00,
 At Door, \$695.00

Exhibits Only

February 27-28, 10:00 a.m. to 5:00 p.m.
 Before February 1, \$15.00, At Door, \$25.00

Multimedia Magic on a Shoestring

February 27-28, 10:00 a.m. to 5:00 p.m.
 Before February 1, \$75.00,
 At Door, \$90.00

For more detailed conference information, call 1-800-945-3313.

Send in this form by February 1 to preregister for MEDIA '92. By preregistering you will qualify for significant discounts on the exhibition and conference. You'll receive \$10 to \$100, and be guaranteed admission even in the event of a sell-out.

Please choose the most appropriate package and completely fill out the form below. Please do not staple check to form. **Send completed forms to: MEDIA '92, P.O. Box 4010, Dedham, MA 02026.** Registration forms received after February 1 will be returned. Purchase orders cannot be accepted. Registration fees are nonrefundable.

Please register me for:

☐ **Package One \$595**

Maximum Power for Maximum Payback
 plus Exhibits
 Preregister by February 1 (\$695 at door).

☐ **Package Two \$75**

Multimedia Magic on a Shoestring
 plus Exhibits
 Preregister by February 1 (\$90 at door).

☐ **Package Three \$15**

Exhibits Only
 Preregister by February 1 (\$25 at door).

Country Badges Maximum Power conference badges will be available for pick-up at the L.A. Convention Center beginning February 26, 12:30 p.m. to 5:30 p.m., and throughout operational hours, February 27-28. All other badges will be mailed on or around February 10, 1992.

Please send my registration badge and further information to:

Please check one: ☐ Home Address ☐ Company Address

Last Name _____ First Name _____
 Street Address _____
 City _____ State _____ Zip _____
 Country (other than US) _____ Telephone _____

Mailing to company address:

Title _____
 Company _____

Check enclosed (make payable to MEDIA '92) ☐ MasterCard ☐ Visa ☐ American Express Amount \$ _____
 Account Number _____ Expiration Date (include all numbers) _____

Card Holder Signature (Signature necessary to be valid) _____

If card holder is other than registrant, please print cardholder's name below:

Last Name _____ First Name _____

After February 1, you must register at MEDIA '92.

Please check the appropriate information:

My Industry or Profession

- ☐ Manufacturer (non-computer)
☐ Manufacturer (computer industry)
☐ Distributor/dealer/retailer/service
☐ Business
☐ Legal services
☐ Communications/publishing
☐ Education
☐ Government
☐ Consultant
☐ Transportation
☐ Information services
☐ Utilities
☐ Engineering
☐ Health services
☐ Other (specify) _____

Your Title

16. ☐ CEO/president/owner
 17. ☐ DP/MIS manager
 18. ☐ Manager/department head
 19. ☐ Network manager
 20. ☐ Programmer/analyst
 21. ☐ Engineer/R&D
 22. ☐ Consultant
 23. ☐ Marketing/sales
 24. ☐ Educator
 25. ☐ Art director/graphics
 26. ☐ Editor/writer
 27. ☐ Other (specify) _____

Organization Size (number of international and national employees)

28. ☐ Under 50
 29. ☐ 50-99
 30. ☐ 100-499
 31. ☐ 500-999
 32. ☐ 1,000-5,000
 33. ☐ Over 5,000

What multimedia platforms are most applicable?

34. ☐ Macintosh
 35. ☐ DOS
 36. ☐ UNIX
 37. ☐ OS/2
 38. ☐ Amiga
 39. ☐ Workstation
 40. ☐ None
 41. ☐ Other (specify) _____

MEDIA '92

SAY YOU SAW IT IN **MACWORLD**.

To purchase products advertised in this issue call the phone numbers below or use the reader service number for our Fast Facts Product Information Card located on the next page.



Page No.	Advertiser	Reader Svc. No.	Phone	Page No.	Advertiser	Reader Svc. No.	Phone	Page No.	Advertiser	Reader Svc. No.	Phone
162	Abacus Concepts	50	800/666-STAT	359	Hard Drives International	—	800/776-DISK	313	New Life Computer Corp.	294	800/663-6395
335	Adobe Systems Inc.	—	800/344-8335	285	Hayes Microcomputer	126	—	159	NewGen Systems, Inc.	74/75	800/879-4639
358	Advanced Business Center	227	800/274-7747	254-255	Hewlett Packard	—	—	263	Nikon	67	800/NIKON US
66	AEC Software	83	800/346-9413	41	Image Club	—	403/262-8008	161	O.C.E.A.N. Microsystems	131	408/374-8300
76	Alisa	—	800/628-3274	245	Images & Tools Design	—	—	37	Odesta	238	800/323-5423
312	Altys	35	214/680-2060	—	Conference	—	415/267-1745	415	Optical Access Int'l.	56	800/433-5133
12	Anthro	—	800/325-3841	58	Inline Design	111	800/453-7671	59	Outbound Systems	30	800/444-4607
378	APS	15	800/235-2752	307	Insignia Solutions	72	800/848-7677	194-195	P.S.I.	61	800/622-1772
292	Articulate Systems	22	800-443-7077	152B-152C	International Data Group	229	—	322	Peachtree Software	100	800/247-3224
152W	Asante	24	800/662-9686	261	Intuit	—	800/624-8742	34	Personal Training Systems	44	—
411	Aura Systems	120	800/365-AURA	333	Iomega	240	800/777-6649	14-15	Pinnacle Micro	266	800/553-7070
22	Avery Dennison Stationary Products	53	800/677-5150	332	James Burn Int'l.	134	800/431-4610	77	Postcraft International	200	805/257-1797
306	Avery Dennison Stationary Products	108	800/677-5150	BC	Kensington Microware	—	800-535-4242	4	PowerUp Software	87	800/851-2917
156-157	Beagle Brothers	6	619/452-5500	152A	Kensington Microware	—	800-535-4242	69	Prescience	179	800/UC-R-MATH
40	Berkeley Systems Design	8	510-540-5535	8	Kiwi Software	33	800/321-5494	412	Printer Connection	—	714/758-8832
286	Bimillennium	233	800/488-8662	25-32	La Cie	—	800/999-0143	409	Quantum Leap Technologies	136	800/762-2877
380-381	BottomLine	—	900/420-3636	70-71	LaserMaster Corporation	182	612/944-8726	411	Quantum Leap Technologies	137	800/762-2877
356-357	BottomLine	—	900/420-3636	413	Learning Adventure Computer Club	121	—	16	Quark	295	800/356-9363
18-19	Caere Corporation	73	800/535-SCAN	186	Logicode Technology, Inc.	93	800/735-6442	38	Radius	178	800/227-2795
330	Calcomp	3/133	800/932-1212	336AB	Logicode Technology, Inc.	—	800/735-6442	73	RasterOps	—	800/729-2656
158	Calliscope	82	800/645-8550	6-7	Lotus	—	800/TRADE-UP	153	Reference Software	—	—
24	Canon USA	110	800/OKCANON	379	Mac and More	85	800/MAC-0052	64	Salient	39	415/321-5975
65	Canon USA	164	800-OKCANON	79-142	Mac Zone, The	70	800/248-0800	337	Secure-It	239	800/451-7592
150	Casady & Greene	32	800/359-4920	314-321	Mac's Place	209	800/367-4222	10-11	Seiko Instruments	—	—
188	CD Technology	102	408/752-8500	60-61	MacAcademy	106	800/527-1914	275	Sharp	47	800/BE-SHARP
196	Chinon America, Inc.	94	800/441-0222	354	MacBest	98	800/530-5050	192	Sierra Semiconductor Corp.	—	—
303	Chipsort	—	—	370-371	MacCenter	—	800/950-3726	198	SoftSync/BLOC	367	800/933-2537
290	CompuServe	319	800/848-8199	44-53	MacConnection	—	800/800-3333	409	Software Publishers of America	97	800/233-0555
308	ComputaLabel	116	800/289-0993	360	MacDepot	144	800/222-2808	56	Software Security	107	800/333-0407
36	CompuTeach	168	800/448-3224	343	MacDirect	140	800/621-8467	23	Software Toolworks	86	—
207	Computer Associates	10	800/531-5236	33	MacFriends	58	800/622-8804	304AB	Software Ventures	—	800/336-6477
145	Contemporary Cybernetics	188	804/873-0900	155	MacFriends	109	800/622-8804	35	Specular Int'l.	112	415/549-7600
54	Core Int'l.	215	407/997-6055	72	MacFriends	258	800/622-8804	147	SPSS, Inc.	210	800/45-STATS
20	Curtis Manufacturing	20	603/532-4123	326	Macintosh Service Directory/ MZ Group	223	800/927-1100	57	Statsoft	99	918/583-4149
410	D'Pix	261	800/238-DPIX	366-369	MacLand	40	800/888-8779	324	Strata	293	800/869-6855
300	Dantz Development	26	510/849-0293	340	MacNews	69	800/243-9383	43	Supermac	88	800/334-3005
151	Data Desk	95	607/257-1000	372-373	MacProducts USA	175	800/622-3475	341	Supermac	132	800/334-3005
288	Dataviz	36	800/733-0030	267-272	Macromind/Paracomp	—	800/248-4477	148-149	Supra Corporation	—	800/967-8772
160	Daystar Digital	201	800/962-2077	342	Macs Now	171	800/766-2313	329	Symantec	96	800/441-7234
9	Deneba Software	57	800/6CANVAS	337	MacSciTech	64	508/755-5242	302	T B S P	25	800/755-TBSP
13	Design CAD	336	918/825-4848	376-377	MacSource	48	800/685-2622	352	Tass Optical World, Inc.	211	619/558-8882
361	DGR Technologies	81	800/235-9748	162	MacTable/ Scanco	252	800/722-6263	152E	Teknosys	142	800/873-3494
332	Digital Vision	242	800/346-0090	374-375	MacTel Technologies	105	800/950-8411	327	Tektronix	143	800/835-6100
299	Dove Computer	128	800/662-7627	200-206	MacWarehouse	270	800/255-6227	163	Teleware	76	800/332-MYOB
298	Dove Computer	138	800/662-7627	310-311	Macworld Expo	—	—	184	Texas Instruments	313	800/527-3500
362-363	Dr. Mac	—	800/825-6227	190	Mass Microsystems, Inc.	207	800/522-7979	364-365	Thirdwave	156	800/284-0486
5	E-Machines	303	800/34GRAPH	42	Mathsoft, Inc.	34	800/MAT-HCAD	164-183	Tiger Software	114	800/888-4437
338-339	Eastman Kodak	186	800/44-KODAK	344-347	Media '92	—	—	295	Timeworks	206	705/559-1310
342	Educational Resources	28	800/624-2926	154	Microcom, Inc.	41	919/490-1277	152D	Type X	101	216/826-2878
304	Ehman	2	800/257-1666	259	MicroNet Technology	113	714/837-6033	288AB	Unbound, Inc.	—	—
408	Engage Communication	77	408/688-1021	78	Microseeds	228	813/882-8635	382	Wholesale 54	—	800/927-3157
300	Engineered Software	12	919/299-4843	276	Microsoft	—	800/541-1261	265	Xanle	119	800/926-8839
409	Environmental Services	141	—	IFC-01	Microsoft	—	800/541-1261	253	XChange	145	—
62	Envisio	129/150	612/339-1008	74-75	Microsoft	—	800/541-1261				
353	Express Direct	1	800/535-3252	281	Microtech Int'l.	80	800/325-1895				
355	Express Direct	149	800/535-3252	279	Microtech Int'l.	127	800/325-1895				
352	Express Direct	—	800/5353252	309	Microtek Labs, Inc.	63	800/654-4160				
283	Fifth Generation Systems	130	800/477-8212	IBC	Mirror Technologies	125	800/654-5294				
301	Fifth Generation Systems	135	800/477-8212	68	Mobius Technologies	89	800/523-7933				
325	Fifth Generation Systems	151	800/477-8212	151	Multi-Ad Services	115	800/447-1950				
67	Frame Technologies	60	800/U4-FRAME	408	NAC	51	408/923-3983				
39	GDT Softworks	42	800/663-6222	296	NEC Technologies	124	800/NEC-INFO				
152	Graphsoft	46	301/461-9488	336	NEC Technologies	—	800/NEC-INFO				

MACWORLD EXPO
JANUARY 12-15
SAN FRANCISCO

FASTFACTS

JUST FOR YOU. FREE PRODUCT INFORMATION FROM MACWORLD.

There's no cost; no obligation. Simply fill out the form and circle the numbers on the card below for the products which interest you.

Mail the card. We pay the postage!

Numbers for advertised products can be found in the ad and in both the Product Index and the Advertiser Index.

Recycled Paper  Contains 10% Post Consumer Waste



Free Product Info

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150

151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170
171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190
191	192	193	194	195	196	197	198	199	200

201	202	203	204	205	206	207	208	209	210
211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230
231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250

251	252	253	254	255	256	257	258	259	260
261	262	263	264	265	266	267	268	269	270
271	272	273	274	275	276	277	278	279	280
281	282	283	284	285	286	287	288	289	290
291	292	293	294	295	296	297	298	299	300

301	302	303	304	305	306	307	308	309	310
311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330
331	332	333	334	335	336	337	338	339	340
341	342	343	344	345	346	347	348	349	350

351	352	353	354	355	356	357	358	359	360
361	362	363	364	365	366	367	368	369	370
371	372	373	374	375	376	377	378	379	380
381	382	383	384	385	386	387	388	389	390
391	392	393	394	395	396	397	398	399	400

MACWORLD



Free Macworld Shopper Info

401	402	403	404	405	406	407	408	409	410
411	412	413	414	415	416	417	418	419	420
421	422	423	424	425	426	427	428	429	430
431	432	433	434	435	436	437	438	439	440
441	442	443	444	445	446	447	448	449	450

451	452	453	454	455	456	457	458	459	460
461	462	463	464	465	466	467	468	469	470
471	472	473	474	475	476	477	478	479	480
481	482	483	484	485	486	487	488	489	490
491	492	493	494	495	496	497	498	499	500

501	502	503	504	505	506	507	508	509	510
511	512	513	514	515	516	517	518	519	520
521	522	523	524	525	526	527	528	529	530
531	532	533	534	535	536	537	538	539	540
541	542	543	544	545	546	547	548	549	550

551	552	553	554	555	556	557	558	559	560
561	562	563	564	565	566	567	568	569	570
571	572	573	574	575	576	577	578	579	580
581	582	583	584	585	586	587	588	589	590
591	592	593	594	595	596	597	598	599	600

201	202	203	204	205	206	207	208	209	210
211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230
231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250

251	252	253	254	255	256	257	258	259	260
261	262	263	264	265	266	267	268	269	270
271	272	273	274	275	276	277	278	279	280
281	282	283	284	285	286	287	288	289	290
291	292	293	294	295	296	297	298	299	300

301	302	303	304	305	306	307	308	309	310
311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330
331	332	333	334	335	336	337	338	339	340
341	342	343	344	345	346	347	348	349	350

351	352	353	354	355	356	357	358	359	360
361	362	363	364	365	366	367	368	369	370
371	372	373	374	375	376	377	378	379	380
381	382	383	384	385	386	387	388	389	390
391	392	393	394	395	396	397	398	399	400

MACWORLD



Free Macworld Shopper Info

401	402	403	404	405	406	407	408	409	410
411	412	413	414	415	416	417	418	419	420
421	422	423	424	425	426	427	428	429	430
431	432	433	434	435	436	437	438	439	440
441	442	443	444	445	446	447	448	449	450

451	452	453	454	455	456	457	458	459	460
461	462	463	464	465	466	467	468	469	470
471	472	473	474	475	476	477	478	479	480
481	482	483	484	485	486	487	488	489	490
491	492	493	494	495	496	497	498	499	500

501	502	503	504	505	506	507	508	509	510
511	512	513	514	515	516	517	518	519	520
521	522	523	524	525	526	527	528	529	530
531	532	533	534	535	536	537	538	539	540
541	542	543	544	545	546	547	548	549	550

551	552	553	554	555	556	557	558	559	560
561	562	563	564	565	566	567	568	569	570
571	572	573	574	575	576	577	578	579	580
581	582	583	584	585	586	587	588	589	590
591	592	593	594	595	596	597	598	599	600

Please print or type all information

Name _____

Title _____

Co. _____

Address _____

City _____

State _____ Zip _____

Phone _____

Fax _____

☐ Check box and fill in the appropriate information to subscribe to Macworld. You will be billed \$24.95 for a 1-year (12 issue) subscription (U.S. only).

Expires April 20, 1992 S1 February 1992

Please print or type all information

Name _____

Title _____

Co. _____

Address _____

City _____

State _____ Zip _____

Phone _____

Fax _____

☐ Check box and fill in the appropriate information to subscribe to Macworld. You will be billed \$24.95 for a 1-year (12 issue) subscription (U.S. only).

Expires April 20, 1992 S2 February 1992

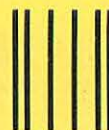
FACTS, FAST!

FREE PRODUCT INFORMATION. Get valuable information about the products that interest you. There's no cost; no obligation. Just fill out this **FASTFACTS** Information form. Circle the numbers for the desired products.

Then mail the card. We pay the postage! For even faster results fill out and send the card via our **FASTFAX**.

Now fast...get the facts, the competition's gaining on you.

MACWORLD



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS PERMIT NO. 215 PITTSFIELD, MA

POSTAGE WILL BE PAID BY ADDRESSEE

MACWORLD

Reader Service Department
P.O. Box 5299
Pittsfield, MA 01203-9906



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS PERMIT NO. 215 PITTSFIELD, MA

POSTAGE WILL BE PAID BY ADDRESSEE

MACWORLD

Reader Service Department
P.O. Box 5299
Pittsfield, MA 01203-9906



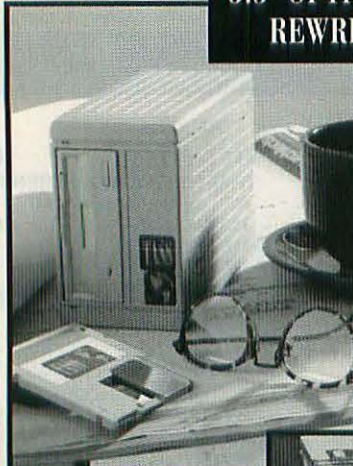


A QUICK & EASY **PRODUCT INDEX** FROM MACWORLD.

Simply use this index to find the page or advertiser of the products which interest you. Then, use the reader service number for our FastFacts Product Information Card located on the preceding page.

Page No.	Advertiser	Reader Svc. No.	Page No.	Advertiser	Reader Svc. No.	Page No.	Advertiser	Reader Svc. No.	Page No.	Advertiser	Reader Svc. No.
SOFTWARE			PERSONAL BUSINESS/HOME			DIGITIZERS/SCANNERS			TRAINING		
BUSINESS			253 XChange			18-19 Caere Corporation			60-61 MacAcademy		
66	AEC Software	83	303	Chipsoft	—	330	Calcomp	3/133	TRADESHOWS/CONFERENCES		
156-157	Beagle Brothers	6	261	Intuit	—	196	Chinon America, Inc.	94	245 Images & Tools Design Conf.		
18-19	Caere Corporation	73	33	MacFriends	58	338-339	Eastman Kodak	186	337 MacSciTech		
303	Chipsoft	—	155	MacFriends	109	263	Nikon	67	310-311 Macworld Expo		
207	Computer Associates	10	72	MacFriends	258	DISPLAY			344-347 Media '92		
151	Data Desk	95	ENTERTAINMENT			411	Aura Systems	120	ACCESSORIES		
67	Frame Technologies	60	36	Computeach	168	5	E-Machines	303	FURNITURE		
8	Kiwi Software	33	58	Inline Design	111	304	Ehman	2	12	Anthro	—
6-7	Lotus	—	MULTIMEDIA			Mirror Technologies			162	MacTable/Scanco	252
276	Microsoft	—	35	Specular Int'l.	112	68	Mobius Technologies	89	MISCELLANEOUS		
IFC-01	Microsoft	—	324	Strata	293	73	RasterOps	—	22	Avery Dennison Stationary Prod.	53
74-75	Microsoft	—	NETWORKING			275	Sharp	47	306	Avery Dennison Stationary Prod.	108
37	Odesta	238	76	Alisa	—	MODEMS			308	ComputaLabel	116
322	Peachtree Software	100	307	Insignia Solutions	72	299	Dove Computer	128	Kensington Microware		
34	Personal Training Systems	44	152E	Teknosys	142	298	Dove Computer	138	152A	Kensington Microware	—
4	PowerUp Software	87	LANGUAGES			285	Hayes Microcomputer	126	326	Macintosh Service Directory	223
69	Prescience	179	286	Bimillennium	233	186	Logiccode Technology, Inc.	93	162	MacTable/ Scanco	252
198	SoftSync/BLOC	367	329	Symantec	96	194-195	P.S.I.	61	MAIL ORDER		
409	Software Publishers of America	—	SECURITY			192	Sierra Semiconductor Corp.	—	358	Advanced Business Center	227
304	Software Ventures	—	78	Microseeds	228	148-149	Supra Corporation	—	378	APS	15
147	SPSS, Inc.	210	337	Secure-It	239	NETWORKING			380-381	Bottomline	—
57	Statsoft	99	56	Software Security	107	152	Asante	24	356-357	Bottomline	—
302	T B S P	25	UTILITIES			408	Engage Communication	77	362-363	Dr. Mac	—
163	Teleware	76	306	Avery Dennison Stationary Prod.	108	408	NAC	51	353	Express Direct	1
VERTICAL			40	Berkeley Systems Design	8	HARD DISKS/STORAGE			355	Express Direct	149
162	Abacus Concepts	50	300	Dantz Development	26	378	APS	15	379	Hard Drives International	85
286	Bimillennium	233	283	Fifth Generation Systems	130	145	Contemporary Cybernetics	188	79-142	Mac Zone/The	70
4	PowerUp Software	87	301	Fifth Generation Systems	135	54	Core Int'l.	215	314-321	Mac's Place	209
302	T B S P	25	325	Fifth Generation Systems	151	361	DGR Technologies	81	354	MacBest	98
WORD PROCESSING			39	GDT Softworks	42	304	Ehman	2	370-371	MacCenter	—
156-157	Beagle Brothers	6	8	Kiwi Software	33	359	Hard Drives International	—	44-53	MacConnection	—
153	Reference Software	—	154	Microcom, Inc.	41	333	Imomega	240	360	MacDepot	144
CAD/CAM			64	Salient	39	25-32	La Cie	—	343	MacDirect	140
13	Design CAD	336	MISCELLANEOUS			343	MacDirect	140	366-369	MacLand	40
300	Engineered Software	12	39	GDT Softworks	42	366-369	MacLand	40	340	MacNews	69
152	Graphsoft	46	HARDWARE			372-373	MacProducts USA	175	372-373	MacProducts USA	175
42	Mathsoft, Inc.	34	COMPUTER SYSTEMS			190	Mass Microsystems, Inc.	207	342	Macs Now	171
CD ROM			380-381	BottomLine	—	259	MicroNet Technology	113	376-377	MacSource	48
188	CD Technology	102	356-357	BottomLine	—	281	Microtech Int'l.	80	374-375	MacTel Technologies	105
410	D'Pix	261	353	Express Direct	1	161	Mirror Technologies	125	200-206	Macwarehouse	270
296	NEC	124	354	MacBest	98	415	O.C.E.A.N. Microsystems	131	412	Printer Connection	—
409	Quantum Leap Technologies	136	33	MacFriends	58	14-15	Optical Access Int'l.	56	16	Quark	295
411	Quantum Leap Technologies	137	155	MacFriends	109	352	Pinnacle Micro	266	352	Tass Optical World, Inc.	211
COMMUNICATION			72	MacFriends	258	364-365	Thirdwave	156	VIDEO		
76	Alisa	—	376-377	MacSource	48	24	Canon USA	110	EXPANSIONS/UPGRADES		
288	Dalaviz	36	374-375	MacTel Technologies	105	62	Envisio	129/150	411	Aura Systems	120
304	Software Ventures	—	59	Outbound Systems	30	43	Supermac	88	279	Microtech Int'l.	127
EDUCATIONAL			16	Quark	295	341	Supermac	132	313	New Life Computer Corp.	294
342	Educational Resources	28	PRINTERS			INPUT DEVICES			194-195	P.S.I.	61
413	Learning Adventure Computer Club	121	65	Canon USA	164	292	Articulate Systems	22	MISCELLANEOUS		
34	Personal Training Systems	44	355	Express Direct	149	20	Curtis Manufacturing	20	361	DGR Technologies	81
69	Prescience	179	254-255	Hewlett Packard	—	409	Environmental Services	141	332	James Burn Int'l.	134
Fonts			70-71	LaserMaster Corporation	182	152	Kensington Microware	—	265	Xante	119
150	Casady & Greene	32	340	MacNews	69	SERVICES			ON-LINE SERVICES		
41	Image Club	—	309	Microtek Labs, Inc.	63	290 Compuserve			319		
77	Postcraft International	200	159	NewGen Systems, Inc.	74/75	CD ROM			319		
GRAPHICS/DTP			10-11	Seiko Instruments	—	188	CD Technology	102	319		
312	Allsys	35	327	Tektronix	143	336	NEC Technologies	—	319		
158	Calliscope	82	184	Texas Instruments	313	ON-LINE SERVICES			319		
410	D'pix	261	BOARDS			290 Compuserve			319		
9	Deneba Software	57	313	New Life Computer Corp.	294	290 Compuserve			319		
332	Digital Vision	242	38	Radius	178	290 Compuserve			319		
67	Frame	60	43	Supermac	88	290 Compuserve			319		
41	Image Club	—	341	Supermac	132	290 Compuserve			319		
77	Postcraft International	200	CD ROM			290 Compuserve			319		
57	Statsoft	99	188	CD Technology	102	290 Compuserve			319		
324	Strata	293	336	NEC Technologies	—	290 Compuserve			319		
295	Timeworks	206	CD ROM			290 Compuserve			319		

**3.5" OPTICAL DRIVE • 128 MB
REWRTABLE & WORM**



**3.5"
128 MB
OPTICAL
STARTING AT
\$1,795**

**3.5" FLOPTICAL
STARTING AT
\$595**



**3.5" FLOPTICAL DRIVE
20 MB REWRITABLE/REMOVABLE**

TASS Optical World presents a new innovation in Optical Drive Technology. A faster, inexpensive way to retain and store all your data. With the new 3.5 MF, a revolutionary new drive with all the performance of larger drives, but, half the size - weight - and speed. ANSI & ISO compliancy.

20 MB FLOPTICAL DRIVE

A new innovation in smaller Drive Technology. A one-inch high 3.5 20 MB Floptical®. A "Superfloppy", the Floptical is the first and only superfloppy to read and write downward to ordinary flexible disks. With the new 20 MB Floptical you can store up to 20 Megabytes of information on a new class of low-cost, very high density (VHD) flexible disk. The floptical disk drive is able to read and write standard low capacity Double Density (DD) and High Density (HD) 3.5-inch diskettes.

650 MB • 1GB • 3.7GB • 10 GB JUKEBOXES

TASS Optical World has the unit for you, for all your optical needs. Whether you need a 650 removable or a 1 Gigabyte removable, cartridges, or any optical device.

**FOR MORE INFORMATION AND PRICING
CALL: 619-558-8882**



TASS OPTICAL WORLD
6730 Mesa Ridge Road.
Bldg. B, San Diego, CA 92121

**SPECIAL CARTRIDGE
PRICES \$149
Volume Discounts Available**

Circle 211 on reader service card.

**"Guaranteed
repair or
replacement
within 72 hours"**

**With Express Direct's Exclusive
ExpressCare™ Service Agreement**

At Express Direct we stand behind our products with the best combination of manufacturer's warranties and our own exclusive Service Agreements. Like ExpressCare, which insures you guaranteed repair or replacement of a defective product within 72 hours. One and two year programs are available and some restrictions do apply so call for complete details.

**It's Just One of the Many Reasons to
Buy from Express Direct.**

Here's 5 More:

1. Low Prices

We've got the most competitive prices in the business. So before you buy from just anybody, call for the best Express Direct price.

2. We Have Products In stock

We inventory Macs. So when you order, most times we have your system on-hand, ready to ship. (And we fully test and preconfigure all products before they ship to you.)

3. Complete Mac Systems

No matter what your Mac needs are, we can configure a complete system perfect for you. And we'll format your system and install all necessary software so all you need to do is plug it in and you're ready to go.

4. Toll-Free Telephone Support

Our helpful technical team can answer your questions promptly, in easy to understand terms. And it's FREE.

5. Knowledgeable Sales Staff

Our staff knows the Mac, so you get the answers and the advice you need - no matter if you're an expert or just starting out.

12" 13" 14" 15" 16" 17" 18" 19"

16" & 19" E-Machines Priced Right



16

E-Machines E16
NEW 16" ColorPage Display
Compatible with LC, IIsi, IIfx
& Quadra built-in video
\$1,095



16

E-Machines TX
16" Two-Page Sony
Trinitron Color Display
\$1,750

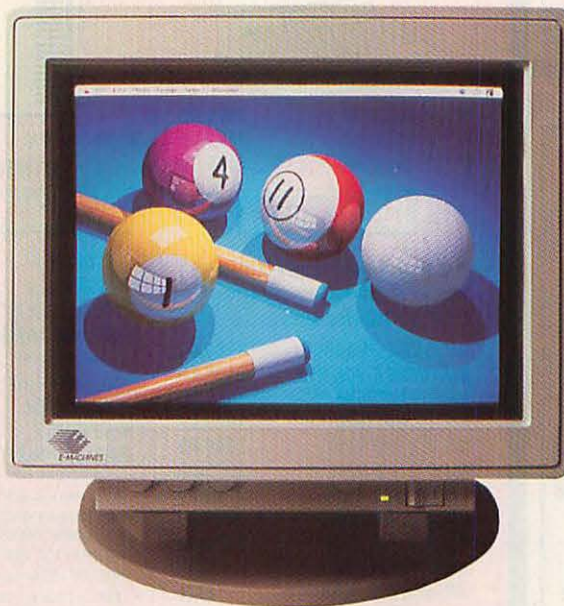


Price Includes
FREE
8-Bit Color Card

19

E-Machines T19
19" Two-Page Sony
Trinitron Color Display
\$2,795

Get Ready!



E-MACHINES

16

ColorPage T16

16" Sony Trinitron Display.
Always perfect for
LC, IIsi, IIfx, IIfx.
Now delivers full-page
24-bit color with Mac
Quadra built-in video!

With Rebate &
Quadra Purchase Just
\$1,595

Now the Award-winning T16 is "Quadra-Ready"

Pick a Card. Express Direct is E-Machines' largest retailer worldwide (over 100 Display Systems in stock!) So whether it's 8-bit or 24-bit, 16" or 19", let our consultants advise you on the right Color Card and the right Display perfect for *your* application needs. (Depending upon your particular Mac, some of these displays may require the purchase of a video card. Call for details.)

Pick a Mac. Now get Norton Utilities for the Macintosh FREE when you purchase a Mac cpu with a display! Norton Utilities version 1.1, now supporting System 7.0, has even more powerful features than ever. Note: market fluctuations & magazine deadlines don't always allow us to advertise our latest price. So call us before you buy from just anybody!

Classic, 2/40...\$1,049
Mac IIsi, 3/40.....Call

Mac IIfx, 5/0.....\$2,799
while quantities last

Quadra 700, 4/0...\$4,399
Quadra 900, 4/0...\$5,595

The Express Advantage. Mac Systems in stock - many ready for same day shipping
E Unlimited Toll-Free Telephone Support **E** Experienced, knowledgeable Macintosh Sales Professionals **E** Exclusive ExpressCare™ Service Agreement **E** Leasing Terms available on most products.

Express Hours (Central):
M-F 8AM-7PM, Fax 24hrs, 7days/wk



"The Mac Systems Company"

**EXPRESS
DIRECT**

1-800-535-3252

1801 West Larchmont Ave. • Chicago, Illinois 60613 USA • 312.549.0030 • FAX 312.549.6447

International Orders Shipped Daily • FAX 312.549.6447

Credit card orders are not charged until product is shipped. Prices subject to change without notice. All warranties on Macintosh or Apple brand products sold by Express Direct will be honored by Express Direct or its authorized agents only. All other manufacturers' warranties still apply.

Circle 1 on reader service card



(800) 530-5050

INFORMATION
TECH SUPPORT
INTERNATIONAL ORDERS
(816) 741-6587
FAX (816) 741-6847

2631 NE VIVION,
SUITE 27
KANSAS CITY, MO
64118



Visa



Mastercard



Discover

COD'S WELCOME
HOURS:
MONDAY - FRIDAY
9:00 TO 7:00 CST
SATURDAY
10:00 TO 4:00 CST



PB 170, 4MB 40MB **3895.00**
PB 140, 2MB 40MB **2695.00**
PB 100, 2MB 20MB **2149.00**

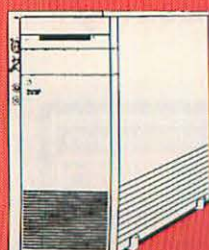
CPU'S

In addition to Apple's standard configurations, we also offer custom configurations to suit your individual needs.

MAC CLASSIC, 2MB 40MB **1189.00**
MAC CLASSIC II, 2MB 40MB **1559.00**
MAC LC, 2MB 40MB **1449.00**
MAC LC, 4MB 80MB **1849.00**
MAC II SX, 3MB 40MB **2049.00**
MAC II SX, 5MB 80MB **2395.00**
MAC II CX, 5MB 1 FLPY **2795.00**
MAC II CX, 5MB 80MB **3295.00**
MAC II CX, 5MB 105MB **3195.00**
MAC II FX, 4MB 1 FLPY **CALL**
MAC II FX, 4MB 80MB **CALL**



QUADRA 700, 4MB **4395.00**



QUADRA 900, 4MB **5549.00**

OTHER CONFIGURATIONS AVAILABLE . . . CALL

PRINTERS

LASERWRITER IIF **2719.00**
LASERWRITER IIG **CALL**
PERSONAL LASER NT **1695.00**
PERSONAL LASER LS **849.00**
LASERWRITER II NT **CALL**
LASERWRITER II NTX **CALL**
STYLEWRITER **399.00**
HP DESKWRITER **525.00**
ABATON LASERSCRIPT LX **1595.00**

- ALL PRODUCTS ARE 100% APPLE NEW IN THE BOX
- NO NONSENSE, FULL 1 YEAR WARRANTY PARTS AND LABOR WITH A FIX OR REPLACE POLICY, AND WE PAY FOR THE FEDERAL EXPRESS BOTH WAYS.
- NO SALES TAX ON ORDERS OUTSIDE MISSOURI
- NO SURCHARGE FOR CREDIT CARD ORDERS
- TOLL FREE TECHNICAL SUPPORT

VIDEO



E-MACHINES
Imagination at work™

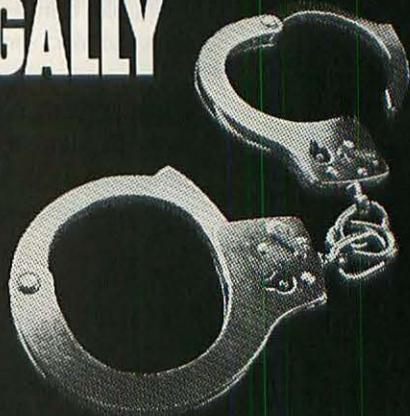
COLOR PAGE T16 **1749.00**
E-MACHINES E16 **1099.00**
E-MACHINES TX16 **1695.00**
E-MACHINES T19 **2849.00**
CALL FOR E-MACHINES COLOR CARDS
APPLE 13" RGB **649.00**
APPLE 12" RGB **399.00**

MACBEST CARRIES THOUSANDS OF SOFTWARE, PERIPHERALS AND ACCESSORIES FOR THE MACINTOSH

Prices are subject to change without notice. Not responsible for typos. PO and COD orders are subject to approval. COD orders are shipped via Federal Express only and subject to a shipping and COD charge. Apple and Macintosh are registered trademarks of Apple Computer, Inc.

Circle 98 on reader service card

COPY SOFTWARE ILLEGALLY AND YOU COULD GET THIS HARDWARE ABSOLUTELY FREE.



Software piracy isn't just a crime. It's a shame. Because most people who do it aren't even aware that it's illegal. If you copy software that's protected by copyright, you could lose your job, face a civil suit, pay a \$100,000 fine and possibly be imprisoned. So get the facts now. To request more information, contact the Software Publisher's Association at 1-800-955-7721. Because in a court of law, ignorance is one thing you won't be able to plead.



Don't Copy That Floppy



No Wild, No Wildlife.

The California desert tortoise is losing ground. Its young are being crushed by motorcycles and off-road vehicles. Sheep and cattle grazing are diminishing an already scant supply of food while mining and road building are destroying the tortoise's natural habitat.

The fact is that the tortoise population has declined as much as 90% over the last fifty years. This drop is a true biological indicator of how severely the desert ecosystem is at risk.



The Sierra Club works to save wildlife by saving the wilderness. We have a history of victories. And, we believe with your help, the three-million-year-old desert tortoise can win back its native turf.

For information on how you can help:

Sierra Club
Dept. DT
730 Polk Street
San Francisco, CA 94109
(415) 776-2211

Take a 'Q' From Us

QMS

QMS-PS 410 300 dpi Laser
Printer (4-ppm) with Serial, Parallel
or AppleTalk auto switching

\$1,695



QMS

QMS 815MR 300 dpi & 600
dpi Laser Printer (8-ppm) with
Serial, Parallel or AppleTalk auto
switching

\$4,195



WE CARRY THE COMPLETE LINE OF QMS PRINTERS.

Let us quote you on the QMS-PS 825MR or
the QMS ColorScript 100 of your choice.
Ask about our Leasing Terms & warranties.



1801 West Larchmont Ave. • Chicago, Illinois 60613 USA
312.549.0030 • FAX 312.549.6447

1-800-535-3252

International Orders Shipped Daily
FAX 312.549.6447

Please note that in the event of unforeseeable circumstances,
prices are subject to change without notice.

Circle 149 on reader service card

NEW! Quark XPress 3.1 \$511

Ask about our wide selection of Quark XTensions.



QMS PS-410 \$1629

300 DPI Postscript • Auto PC-Mac Switching
45 Resident Fonts • 2MB RAM • With Toner Cart
QMS 2MB Upgrade \$210
QMS 4MB Upgrade \$360



DGR 128MB Removable 3.5" Erasable Optical \$1499

Erasable Optical Drive with 35ms access.
3.5" 128MB Cartridges only \$99

PLI Infinity 40 / Infinity 88
\$575 / \$849



Abaton Interfax 24/96
\$259



1, 2, & 4 MB SIMMs
\$35, \$89 & \$179



HP DeskWriter \$389
HP DeskWriterC \$722



NEW! Claris Resolve \$249
Claris FileMaker Pro \$181



Seiko CM-1445
\$539



LC Math 68882 FPU
or 512k VRAM \$79



SyQuest 45/88 Cartridges
\$63 / \$119



TokaMac 040
Accelerators
LC, SE/30, IIsi, IIfx, IIfx



Umax 630 24-bit Scanner
with PhotoShop \$1289



SYSTEMS

**Call for PowerBook
RAM & Quadra VRAM**

SYSTEM LEASING NOW AVAILABLE

Macintosh Classic 1/0	825
Macintosh LC 2/40	1550
Macintosh IIsi 3/40	1999
Macintosh IIfx	2725
Macintosh IIfx	3745
Macintosh Classic Model II 2/40	1541
Macintosh Classic Model II 4/80	1948
Macintosh Quadra 700	4237
Macintosh Quadra 900	4757
Macintosh PowerBook 100 2/20	1849
PowerBook 100 2/20 w/ Floppy	2029
Macintosh PowerBook 140 2/40	2597
Macintosh PowerBook 140 4/40	2841
Macintosh PowerBook 170	3734

NETWORKING

Asante 10baseT Hub	610
Asante 16k Cards/ All CPU's	239
Asante 64k Cards/ All CPU's	255
Cayman Gatorbox/GatorPrint	1849/359
DaynaPort/DaynaPort FPU	245/349
Dayna EtherPrint/EtherPrint Plus	325/589
Farallon Star Controller	799
Farallon Star Controller EN	1499

DoveFax Plus

24/96 Fax modem with built-in
Voice Mail/Answering
Machine Capabilities

\$310

DoveFax 24/96 \$227



PhoneNet 10 Pack	188
QuickMail 10 User	285
Shiva Ethergate / FastPath 4	1262/1850
Shiva Netbridge or Telebridge	399
Timbuktu/Remote Access Pak	732

INPUT/OUTPUT

Apple Extended Keyboard	170
Datadesk Keyboard 101E	115
EMAC Silhouette	75
Kensington Turbo Mouse	101
Keytronic MacPro Plus Keyboard	115
Mac Recorder Digitizer Only	89
Wacom 6x9" Standard Surface	459
Wacom 12x12" Standard Surface	659
Wacom 12x12" ElectroStatic Surface	710
Wacom 12x18" Standard Surface	969
Wacom 12x18" ElectroStatic Surface	1025
18x25" Standard Surface	2550
Wacom Extra Cordless Pressure-Sensitive Stylus (Soft or Firm)	99
Cordless Four Button Cursor	119

MODEMS & FAXES

Courier 9600 V-32 MNP-5	695
Global Village Teleport with FAX	175
Hayes Smart Modem 2400	325
Practical Peripherals 2400b	164
Practical Peripherals MacPak	225
Shiva Net Modem v.32	1230
ZOOM 2400 Baud Modem/Fax	99
ZOOM 24/96 Send/Receive Fax	170

Microtek TrueLaser

RISC based 6ppm 3MB RAM,
10X faster than the TI microLaser
Auto Mac-PC Switching.

\$1248

On Site Warranty Included!



PRINTERS

Abaton LaserScript LX	1499
Apple LaserWriter III 20MHz 030	2764
Apple LaserWriter IIg 25MHz 030	3533
Apple StyleWriter	425
Apple StyleWriter Refill - Twin Pack	19
Apple Personal LaserWriter LS	915
Apple Personal LaserWriter NT	1750
Calcomp ColorMaster Plus-A Size	5199
Calcomp ColorMaster Plus-B Size	7475
Co-Star LabelWriter	169
Dataproducts LZR 960	1960
GCC PLP II	849
GCC PLP IIs	1246
GCC BLP Elite	1415
GCC BLP II	1659
GCC BLP IIs	2409
Hewlett Packard Lasers	Call
Hewlett Packard DeskWriter	389
HP DeskWriter C	722
Kodak Color 4 InkJet	998

BOTTOM LINE INTERNATIONAL DEPARTMENT

Bottom Line Distribution is committed to the needs of the international Macintosh user and reseller. Fast and reliable customer service is standard. Contact our full-time international department via fax at (512) 476-6399. We ship DHL, UPS

International, or Federal Express. We stock 220v versions of most hardware and 220v converters are available. Dealer inquiries are welcome. Language interpreters are available. Internationale Händlerkonditionen.

INTERNATIONAL SALES FAX (512) 476-6399

Bottom Line Distribution 1800 Rio Grande, Austin, Texas 78701





Turbo microLaser PS/35 \$1949

9 ppm engine • Postscript Level 2 RISC processor
Appletalk interface included on all models
16ppm Turbo microLaser PS/35 XL \$3129

FASTER ENGINE!
9 Pages Per Minute

TI microLaser Plus PS/17 \$1235

TI microLaser Plus PS/35 \$1535

Appletalk interface & 1.5MB RAM included on all models
1MB TI Upgrade \$64 • Replacement Toner \$55

Microtek 600ZS \$1295

600 DPI 24-bit Scanner with Photoshop 2.0
& ScanMatch Calibration Software

\$200 REBATE on
1850S SlideScanner

Microtek 1850S Slide Scanner \$1959

1850 DPI Color Slide Scanner with Photoshop 2.0

RasterOps™



RasterOps Expresso Personal Slide Scanner.....	\$719
RasterOps 364...24-bit Video Frame Grabber.....	\$640
RasterOps 24STV.....	\$1152
RasterOps 24si.....	\$569
RasterOps 24s.....	\$369
RasterOps Video Expander (NTSC or PAL).....	\$486
RasterOps 24XLTV.....	\$2639
RasterOps 8XLi 8-bit/ 24XLi 24-bit card.....	\$989/\$2309
RasterOps 19" Trinitron/ 19" Hitachi.....	\$2620/\$1850
RasterOps ClearVue Grayscale 19" System.....	\$1318
RasterOps 8LC System (19" 8-bit color w/ card).....	\$2856

radius™



Radius Rocket 040 Accelerator.....	\$1749
Radius Pivot / Color Pivot.....	\$710/\$1239
Radius Color Pivot Interface II, IIsi, LC, SE/30.....	\$549
Radius Two Page Display 19".....	\$975
Radius Two Page Display 21".....	\$1249
Radius Two Page Interface II, IIsi, SE, SE/30.....	\$415
Radius Color Display 19".....	\$2999
Radius Color Display 21".....	\$3149
Radius 24-bit Interface 72 DPI.....	\$2515
Radius QuickColor Graphics Engine.....	\$275
Radius Precision Color Calibrator.....	\$485

DAYSTAR
DIGITAL



NEW! PowerCache for the
LC, SE/30, II, IIsi, IICx, & IICI
ONE CARD FITS ALL! 30 Day Money Back Guarantee!

33 MHz PowerCache.....	\$628
40 MHz PowerCache.....	\$817
40 MHz PowerCache with 68882 coprocessor.....	\$1006
50 MHz PowerCache.....	\$1282
50 MHz PowerCache with 68882 coprocessor.....	\$1539
NEW! FastCache IIsi.....	\$259
FastCache IICI.....	\$249

Kodak Diconix M150 Plus.....	440
LinoType 330 & 550 with RIP.....	Call
NEC Silentwriter II Model 90.....	1589
NEC ColorMate PS Model 40.....	4450
Panasonic KX-P4455.....	2102
QMS PS 815MR.....	3860
QMS PS 825MR.....	4650
QMS ColorScript 100 Model 10p.....	4850
QMS ColorScript 100 Model 10.....	5850
QMS ColorScript 100 Model 30i.....	8075
QMS PS-410.....	1629
QMS PS 410 2/4 MB Upgrade.....	210/360
Roland CAMM1 & Signpost software.....	Call
Seiko Smart Label Printer.....	176
Tektronix Color Quick InkJet.....	1651
TI MicroLaser Plus PS-17.....	1235
TI MicroLaser Plus PS-35.....	1535
Toner Kit for MicroLaser.....	55
Letter Tray for MicroLaser.....	55
Legal Tray for MicroLaser.....	55
Paper Feeder Drawer for MicroLaser.....	242

JetInc. InkJet Refill

A clean, inexpensive solution for recharging HP DeskWriter & Apple StyleWriter cartridges. Permanent ink.

Twin Pak
\$15.99
COLORS AVAILABLE



TI Envelope Feeder.....	244
TI microLaser 1MB Kit.....	59
VIDEO SOLUTIONS	
Apple 13" HighRes RGB.....	639
Apple 12" Monochrome Monitor.....	199
Apple 12" Color RGB.....	425
Apple 21" Color RGB.....	3534
DigiVideo Color TV from AAPs.....	199
E-Machines ColorPage E-16.....	1140
E-Machines ColorPage T-16.....	1669
E-Machines T-19.....	2809
E-Machines TX.....	1669
E-Machines Futura EX.....	662
E-Machines Futura SX.....	997
E-Machines Futura SX/8.....	662
E-Machines Futura MX.....	1332
E-Machines DoubleColor.....	326
E-Machines DoubleColor LC.....	394
Ikegami CT-20" Trinitron.....	1849
Mass Micro Quick Image 24.....	579
Microtek 1404-14" Color Monitor.....	499

NEC MultiSync 3FGx.....	659
NEC MultiSync 4FG.....	749
NEC MultiSync 5FG.....	1349
NEC MultiSync 6FG.....	2925
Seiko CM-1445.....	539
ACCELERATORS & CACHE	
Applied Engineering IIsi.....	239
Applied Engineering IIsi w/FPU.....	275
SIMMs: all types/best prices.....	Call

ATTO IIsi Cache Card.....	149
Motrola PMMU 68852.....	109
Sigma Double-Up Card.....	189
TokaMac for the IIsi.....	2399
TokaMac for the LC.....	2079
TokaMac for the IIsi & SE/30.....	2228

SCANNERS

Abaton 300 GS Grayscale.....	829
Abaton 300 Scanner w/PhotoShop.....	1079
Barneyscan Slide Scanner.....	3750
Caere Typist Plus Graphics.....	425
Howtek Scanners.....	Call
Logitech ScanMan 32.....	299
Marstek 800 Hand Scanner.....	375
Microtek 600GS with PhotoShop LE.....	1118
Microtek 600ZS with Photoshop.....	1295
Microtek 1850 SlideScanner.....	1959
Sharp JX600 w/Interface.....	10994
Sharp JX450 w/Interface.....	4617
Umax 630 w/Photoshop.....	1289

System 7 Upgrade

System 7
Upgrade Kit
\$69



HOW TO ORDER Payment: Visa, Mastercard, Discover (no surcharge), checks, and COD's. \$6,000 maximum on COD's. **Tax:** Texas residents add 8% sales tax. **Prices** and items subject to change and availability. **International:** 5% surcharge on international orders. **Mail In:** Orders accepted with a \$10 surcharge. **Terms:** You are not charged until your order is shipped. Phone charges cannot be refunded. **Shipping:** minimum \$5-UPS Ground, Blue, Red, Federal Express. **Returns** must be in original condition and package and require an RMA#. Seal must not be opened on software. Returns may be subject to a restocking fee. Ask for details when ordering. Bottom Line Distribution cannot be responsible for errors in typography or photography.



BOTTOM LINE
DISTRIBUTION

Fax: 1-900-420-8770 \$10 PER FAX

1800 Rio Grande, Austin, Texas 78701

1-900-420-3636

\$2 PER MIN

That's not all. Turn the pages for more of the Bottom Line....

YOUR ONE SOURCE FOR COMPLETE MAC SOLUTIONS

WHY YOUR NEXT PURCHASE SHOULD BE FROM ABC

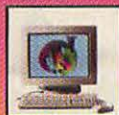
SERVICE

- Friendly, knowledgeable sales & support consultants ready to serve you, with Toll-Free Ordering and Tech Support
- Express Delivery Available anywhere in the world
- Once you place your order, your system will be configured according to YOUR needs, then burned in and tested before shipped
- Education, Government and Institutional Purchase Orders are Accepted
- EXPRESS TWO-DAY SERVICE on ALL SOFTWARE PACKAGES for only \$6



SUPPORT

- All purchases are backed by our 30-day absolute satisfaction money-back guarantee, 1 full year limited warranty & our Express Replacement Policy
- Buy with confidence, as ABC is a strong and rapidly growing company with experience and skill in both Mac and PC Markets
- All together, there's nothing like buying from ABC, your one source for all your Mac solutions



LEASING

CALL OUR DEDICATED LEASING SPECIALIST, KEN, TO SERVE YOU WITH:

- INTERNATIONAL LEASING
- PERSONAL LEASING
- NEW & ESTABLISHED BUSINESS LEASING

\$ 25,000 Business Lease Line of Credit Available in 15 Minutes, Call Today!

Software



NEW!! ADOBE PREMIERE!

The digital movie-making tool for combining video, audio, animation, still images, graphics & more!
CALL FOR PRICE

ADOBE ILLUSTRATOR\$385
ADOBE PHOTOSHOP\$425

SPREADSHEET WARS! LOWEST PRICES!

Claris RESOLVE .....\$272	Microsoft EXCEL .....\$305	Lotus 1-2-3 .....\$345
---------------------------	----------------------------	------------------------

ALDUS FREEHAND\$379

High-end PostScript graphics package - a long time favorite

ALDUS Pagemaker\$499

Grandfather of Desktop Publishing Programs.

Ease & Power. FREE ALDUS PREPRINT WITH PURCHASE OF Pagemaker!

CLARIS FILEMAKER PRO\$379

#1 Favorite is Flexible, Powerful, Easy-To-Use Database

CLARIS MACWRITE II\$135

FREE CORRECT GRAMMAR & UPGRADE TO MACWRITE PRO!

CLARIS WORKS\$210

INTEGRATION HAS NEVER BEEN THIS EASY OR POWERFUL!

QUARK XPress\$479

Full Color, Sophisticated Desktop Publishing

STATE-OF-THE-ART GAME MADNESS!

INLINE DESIGN MUTANT BEACH .....\$49
INLINE DESIGN 3 ON THREE .....\$35
BRODERBUND SIMANT .....\$45
SPECTRUM HOLOBYTE YETIE .....\$44
CASADY & GREENE GLIDER .....\$35
ME & JOHN MADNESS - RAGE! .....\$25

Printers



QMS PS-815 MR\$3895
600 DPI or \$116*
LASER PRINTER (p/mo. on lease)
QMS PS-410\$1699 / \$50 mo.*

HP COLOR DESKWRITER C

\$745 / \$22 mo.*



DESKWRITER\$425 / \$12 mo.*

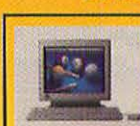
NEWGEN PS 400P (400DPI)\$2095 / \$62 mo.*

TEXAS INSTRUMENTS PS 17\$1340 / \$40 mo.*



SEIKOSHA
MAC PRINTER\$195
ImageWriter II-Compatible

Monitors



E-MACHINES\$2695
T-16 Futura SX or \$80*
SYSTEM (p/mo. on lease)
24-Bit Accel. Card w/ Spectacular
Trinitron 16" Color Monitor

PRICE/LEASE PRICE

E-MACHINES E-16 8-BIT BUNDLE .....\$1399 / \$41 mo.*
E-Machines quality 16" 832 x 624 Color Monitor & 8-Bit Card (256 Colors) at a Breakthrough Price! (NUBUS) .....\$1450 / \$43 mo.*
E-16 8-BIT BUNDLE FOR LC .....\$1450 / \$43 mo.*
GENERATION SYSTEMS 19" MONO MONITOR & Card .....\$875 / \$26 mo.*
Sharp Two-Page Monochrome Monitor & Card .....\$1295 / \$38 mo.*
IKEGAMI CT-20 TRINITRON 24-BIT SYSTEM .....\$2995 / \$89 mo.*
Quality 24-Bit 20" Trinitron System at Unbeatable Price!
CT-20 8-BIT TRINITRON SYSTEM .....\$2495 / \$74 mo.*
RASTER OPS 19" 24-BIT SYSTEM .....\$5250 / \$155 mo.*
24XLI Accel. 24-Bit Board & Spectacular 19" Color Trinitron Monitor .....\$569 / \$17 mo.*
SEIKO 14" COLOR MONITOR
Sony Trinitron Quality in 14" Mac Monitor
SIGMA FULL PAGE GRAY SCALE MONITOR .....\$555 / \$16 mo.*
Sharp Image & Lower Emissions Portrait Monitor

* Please Call for Details.

Peripherals



UMAX UC-630\$1349
24-BIT COLOR or \$40*
SCANNER (p/mo. on lease)
INCLUDES ADOBE PHOTOSHOP & CALERA
WORDSCAN OCR PACKAGES

PRICE/LEASE PRICE

DOVE DOVEFAX MODEM .....\$284 / \$8 mo.*
9600 BPS Fax/2400 BPS Data Modem in tiny package
DOVEFAX PLUS (also includes Voice Mail) .....\$350 / \$10 mo.*
FARALLON PHONENET PC CARD .....\$209 / \$6 mo.*
Card designed to add PC-Compatible to LocalTalk network
MICROTEK 600ZS 24-BIT COLOR SCANNER .....\$1435 / \$42 mo.*
Full True-Color Flatbed Scanner
SUPRA FAX MODEM .....\$195 / \$6 mo.*
9600 Send/Receive Fax, 2400BPS Data, inc. MicroPhone & Cable
HARRIS LABS MAC CLASSIC ACCELERATOR .....\$299 / \$9 mo.*
VCP 4MB REMOVABLE CARTRIDGE DRIVE .....\$499 / \$15 mo.*

QUANTUM HARD DRIVES

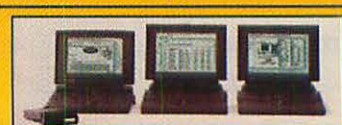
52MB .....int: \$229/ext: \$299	210MB .....int: \$629/ext: \$699
105MB .....int: \$339/ext: \$429	425MB .....int: \$1299/ext: \$1399

MICROTECH HARD DRIVES

Inc. 5 year warranty, Norton Utilities & SMB Public Domain Software	
NOVA 100MB	\$675
NOVA 170MB	\$949
NOVA 1000MB	\$2995

* Please Call for Details.

Mac Systems



NEW MACS!

APPLE POWERBOOK 100, 140 and 170 (NEW!!) .....\$CALL
APPLE MAC CLASSIC II (NEW!!) .....\$CALL
APPLE MAC QUADRA 700 and 900 (NEW!!) .....\$CALL

CALL ABOUT NEW LASERWRITER III & IIg & APPLE I SCANNER!



PRICE/LEASE PRICE

APPLE/E-MACHINES POWER SYSTEM .....\$6125 / \$181 mo.*
Mac Ilii 5MB RAM/105MB Hard Drive, E-Machines' T16 16" Trinitron Color Monitor w/24-Bit Color Card, Extended Keyboard
APPLE MAC Ilii SYSTEM .....\$3850 / \$114 mo.*
Mac Ilii 5MB RAM/105MB Hard Drive, 14" Color Monitor, Ext. Keyboard
APPLE MAC Ilii SYSTEM .....\$3150 / \$93 mo.*
Mac Ilii 5MB RAM/105MB Hard Drive, 14" Color Monitor, Ext. Keyboard
APPLE MAC LC COMPLETE SYSTEM .....\$2380 / \$70 mo.*
Mac LC with 2MB RAM, 40MB Hard Drive, 512K VRAM, 14" Color Monitor, Standard Keyboard, and ClarisWorks Integrated Software Package
APPLE MAC Ilii 3MB RAM/40MB QUANTUM HD .....\$2299 / \$68 mo.*
APPLE MAC Ilii 5MB RAM/105MB QUANTUM HD .....\$2595 / \$77 mo.*
APPLE MAC Ilii 5MB RAM/210MB QUANTUM HD .....\$3750 / \$111 mo.*

LEASING SPECIALS

MAC Ilii SUPER SYSTEM .....\$292 mo.*
Mac Ilii 5/105 HD, E-Machines T16 16" Color Trinitron Monitor w/Accel. 24-Bit Color Board, Ext. Keyboard, QMS PS-410 Laser Printer, Microtek 600ZS Color Scanner w/Adobe PhotoShop & WordScan OCR, Adobe Illustrator, Quark XPress, Claris MacWrite II & FileMaker Pro, and Microsoft Excel

MAC Ilii TAX SYSTEM .....\$145 mo.*
Mac Ilii 5/105 HD, Apple Hi-Res 13" RGB Color Monitor, Ext. Keyboard, HP DeskWriter, Supra Fax Modem, ClarisWorks, MacInTax Personal 1040

APPLE MAC LC STARTER SYSTEM .....\$99 mo.*
Mac LC 4/40 HD, Apple High-Resolution 13" Color Trinitron Monitor, Apple Keyboard, Apple StyleWriter printer, ClarisWorks

0% Down & No Payment for 90 Days
On Lease Specials * Please Call for Details.



FIRST MAC COMPATIBLE NOTEBOOKS!

OUTBOUND 2030/440 .....\$2837 / \$84 mo.*
20MHz, 4MB RAM/40MB HD, Floppy Drive
OUTBOUND 2030/441 .....\$2959 / \$87 mo.*
20MHz, Math Co-Processor, 4MB RAM/40MB HD, Floppy

CASH ORDERS: ADD \$5.00 on Federal Express, Airway Billing and Collect Checks are available on computer orders. (Check for details.) Shipping: Please Call for shipping and handling charges. California Residents only add 8.25% tax. Mail Order: Please allow 4-6 weeks for delivery. Expedited shipping available for an additional charge. Return Policy: 30-day money-back guarantee. (See ABC 12345 for details.)

Financing and Rental: Must be paid back within 30 days of purchase date. Conditions: Prices are subject to change without notice. All items subject to availability. We reserve the right to refuse credit to anyone. Credit Cards: We accept Visa, MasterCard, American Express and Discover. Not all goods are for sale on credit. All information presented includes accurate estimates of prices. Information subject to change without notice.



(800) 274-7747

(310) 325-1422 (fax: (310) 325-4073)
28520 Polo Ave. #3
Irvine, CA 92618

Circle 227 on reader service card

ADVANCE
BUSINESS
CENTER

**NEW
LOWER
PRICES**

POWER PRICED

POWER PACKED

POWERDrive™

HARD DRIVES
International

Insight

TM

800-927-3183

Hard Drives International • 1912 West Fourth Street • Tempe, Arizona 85281
Nat'l. Accounts: 800-755-3938 Sales: 602-350-1128 Int'l. Accounts: 602-350-1144
FAX: 602-350-1180 FAX: 602-350-1150 FAX: 602-350-1188

Prices/availability subject to change without notice. All items are NEW. P.O.'s accepted from qualified buyers. NET 20 Add \$13 shipping for EXPRESS APO/FPO orders. P.O.'s, 30-day Guarantee & 1 Year Replacement Policy may have some restrictions. Shipping is not refundable. All trademarks are the properties of their respective owners. PowerDrive is a trademark of Insight Distribution Network, Inc. © 1991 Insight Distribution Network, Inc. *2 Year Replacement Policy

POWERDrive™

HARD DRIVES

Mbytes	Mechanism	Access	Internal	External
42	Seagate	28 ^{ms}	\$219	\$249
52 ^{PS}	Quantum	17	\$249	\$299
80	Maxtor	17	\$279	\$339
105 ^{PS}	Quantum	16	\$349	\$399
210	Maxtor	15	\$599	\$679
210	Quantum	16	\$629	\$689
320 ^H	Maxtor	14	\$999	\$1049
320 ^H	Micropolis	14	NA	\$1199
660 ^H	Micropolis	16	NA	\$1599
1050 ^H	Micropolis	14	NA	\$2199
1050 ^H	Seagate	14	NA	\$2199
1346 ^H	Micropolis	14	NA	\$2699

REMOVABLE HARD DISK

SyQuest 44Mb	\$449
25ms. Includes 45Mb cartridge, Extra Cartridge *79	
SyQuest 88Mb	\$649
20ms. Includes 88Mb cartridge, Extra Cartridge *119	

OPTICAL STORAGE

CD-ROM	\$539
350ms. External. Uses Chinon mechanism.	

TAPE BACKUP

2.0Gb 4mm DAT	\$1495
Includes Retrospect™ software, 1 cartridge & cables.	
250Mb SANKYO	\$549
External. Includes tape & backup software.	
Extra 150Mb Tape	\$49

MEMORY

1Mb (1x8-80ns)	\$39
4Mb (4x8-80ns)	\$159

POWER PRICED

- ★ NEW super low prices
- ★ We buy quality components in huge volume & pass the savings to you!

POWER PACKED

- ★ Choice of brand name hard drives
- ★ Super FAST access time: 12ms - 28ms
- ★ 50,000+ hours MTBF
- ★ Whisper-quiet fan
- ★ 50-pin connectors to daisy-chain
- ★ Steel case for low heat & support

POWERDrives

- ★ By the experts at HDI, since 1987
- ★ Compatible with ALL Mac Systems
- ★ Toll-free technical support
- ★ Step-by-step Manual included
- ★ 30-day "Worry-Free" Guarantee
- ★ 1 & 2 Year Replacement Policies



Lowest Prices • Great Service Overnight Delivery • 30-Day MBG

1-800-222-2808

Canada Toll-Free: 1-800-548-2512

FAX (213) 542-9998

Mac CPUs

Mac Classic II 2/40	CALL
Mac LC 2/40	1799.00
Mac IIsi 3/120	CALL
Mac IIsi 5/120	CALL
Quadra 700 4mb	CALL
Quadra 900 4mb	CALL
PowerBook 100,140,170	CALL

Call for other configurations.

12X12 TABLET	715.00
MODEMS & FAXES	
APPLIED ENGINEERING	
DATALINK	199.00
DOVE	
DOVEFAX	275.00
DOVEFAX +	350.00
DOVEFAX NUBUS	369.00
HAYES	
PERSONAL 2400 MAC BUNDLE	145.00
PROMETHEUS	
PROMODEM ULTIMA 9600	689.00
PROMODEM 2496 MINIFAX PLUS	285.00
SUPRA	
FAX/MODEM	195.00
ZOOM	
FX9624 FAX MODEM	135.00

24SI	675.00
24SX	675.00
COLORBOARD 264/SE30	599.00
8XLI	1029.00
SAMPO	
ALPHASCAN PLUS	450.00
SEIKO	
CM-1445 HI-RES MONITOR	575.00

SOFTWARE

BUSINESS	
CAERE - 30 Day MBG	
OMNIPAGE	489.00

UMAX



U C - 6 3 0

600 DPI, 24 Bit color scanner bundled with Photoshop. \$1349.00

HARDWARE

DISK DRIVES & CD ROMS	
APPLIED ENGINEERING	
1.44MB DISK DRIVE	210.00
OMEGA	
BERNOULLI 90MB SINGLE	850.00
BERNOULLI 90MB DUAL	1679.00
MASS MICROSYSTEMS	
DATAPAK 45	550.00
DATAPAK 88	746.00
DIAMOND DRIVE 310	1597.00
DIAMOND DRIVE 510	2045.00
MACDEPOT	
CDROM W/ SOFTWARE	499.00
MICROTECH	
CD600 CDROM	705.00



3-YEAR WARRANTY

Hewlett-Packard

Deskwriter

with cable\$399.00

Deskwriter C

with cable\$725.00

PAINTWRITER	659.00
PAINTWRITER XL	1,649.00
SCANJET IIC	1349.00

DISPLAY SYSTEMS



Designer/8 18" System\$2450.00
Designer/24 18" System\$3089.00

Colorpage E16	1099.00
Colorpage T16 & SX	2914.00
RasterOps 24XLI	4309.00
Supermac Spectrum 24	5079.00
Supermatch 24	4650.00
Publisher 15" Series	539.00
Publisher 19" Series	865.00

EUROPA 60	459.00
NOVA 50	499.00
NOVA 200	1099.00
NOVA 400	1539.00

INPUT DEVICES

COSTAR	
STINGRAY TRACKBALL	85.00
EMAC	
SILHOUETTE TRACKBALL	85.00
KENNINGTON	
TURBO MOUSE	105.00
KEYTRONICS	
MAC PRO PLUS KEYBOARD	130.00
MOUSE SYSTEMS	
LITTLE MOUSE	75.00
WACOM	
6X9 TABLET	499.00

PRINTERS & SCANNERS

CAERE	
TYPIST + GRAPHICS	463.00
MICROTEK	
SCANMAKER 6002S	1430.00
NEWGEN - 30 DAY MONEY BACK GUARANTEE	
TURBO PS/300P	1699.00
TURBO PS/400P	2299.00
TURBO PS/630	2595.00
TURBO PS/640	3795.00
TURBO PS/640e	4595.00
QMS	
PS-410	1799.00
PS-815MR	4209.00
PS-825MR	4979.00
SEIKOSHA	
SP2400AP DOT MATRIX	255.00

MONITORS & VIDEO BOARDS

E-MACHINES	
COLORPAGE T-16	1799.00
FUTURA EX	595.00
FUTURA SX	1115.00
GENERATION SYSTEM	
TV BOARD	199.00
TV BOX	199.00
NEC	
MULTISYNC 3FGX	695.00
MULTISYNC 4FG	829.00
RASTEROPS	
24S	499.00

CLARIS - 30 Day MBG	
CLARIS WORKS	199.00
FILEMAKER PRO	199.00
MACPROJECT II	330.00
MACWRITE II	129.00
RESOLVE	269.00
INSIGNIA - 30 Day MBG	
SOFTPC ENTRY LEVEL	129.00
SOFTPC UNIVERSAL	199.00
SOFT AT	299.00
INTUIT - 30 Day MBG	
QUICKEN	45.00
MICROSOFT - 30 Day MBG	
EXCEL 3.0	305.00
OFFICE	559.00
WORD	245.00
WORKS	165.00
ODESTA - 30 Day MBG	
DOUBLE HELIX	420.00
SYMANTEC - 30 Day MBG	
GREATWORKS	225.00
MORE	250.00
THINK C	199.00
THINK PASCAL	159.00
WORDPERFECT - 30 Day MBG	
WORDPERFECT	269.00

DTP & GRAPHICS

ADOBE - 30 Day MBG (Except fonts)	
FONT LIBRARY	CALL
ILLUSTRATOR W/ ATM	359.00
PHOTOSHOP	549.00
ALDUS - 30 Day MBG	
DIGITAL DARKROOM	255.00
FREEHAND	389.00
SUPER 3D	319.00
SUPER CARD	199.00
SUPER PAINT	135.00
CLARIS - 30 Day MBG	
CLARIS CAD	589.00
MACDRAW PRO	269.00
DENEBA - 30 Day MBG	
CANVAS	255.00
ELECTRONIC ARTS - 30 Day MBG	
STUDIO 32	409.00
GRAPHISOFT - 30 Day MBG	
MINICAD +	525.00
LETRASET - 30 Day MBG	
COLORSTUDIO	595.00
MACROMIND - 30 Day MBG	
MACROMIND DIRECTOR	669.00
MACROMIND 3D	1050.00
MEDIAMAKER	475.00
PARACOMP - 30 Day MBG	
FILM MAKER	429.00
SWIVEL 3D	305.00

PowerBook Accessories



Tenba Carrying Case\$109.00
Newer 4mb module\$489.00
Newer 6mb module\$699.00
T/maker Power Bundle ..\$189.00
PSI Power Modem\$215.00

FILE DIRECTOR	85.00
KENT MARSH - 30 Day MBG	
FOLDER BOLT	69.00
MACSAFE II	105.00
QUICK LOCK	35.00
LIFETREE - 30 Day MBG	
CORRECT GRAMMAR	50.00
SYMANTEC - 30 Day MBG	
NORTON UTILITIES	85.00
SAM	65.00
SUM II	99.00

OUR POLICIES

30-DAY MBG APPLIES TO DESIGNATED MANUFACTURERS ONLY
CALL CUSTOMER SERVICE AT (310) 214-0900 FOR A RETURN AUTHORIZATION
ALL RETURNS WITHOUT AN AUTHORIZATION NUMBER (RA #) WILL BE REFUSED. RETURNED PRODUCTS MUST BE IN ORIGINAL CONDITION AND PACKAGING AND MUST BE SENT BACK WITHIN 30 DAYS OF OUR INVOICE DATE. NO REFUNDS FOR FREIGHT CHARGES.
PRICE AND AVAILABILITY OF PRODUCT ARE SUBJECT TO CHANGE WITHOUT NOTICE.
PERSONAL CHECKS REQUIRE UP TO 10 WORKING DAYS TO CLEAR. INCLUDE NAME, ADDRESS AND TELEPHONE NUMBERS (NO P.O. BOXES PLEASE). IF ORDERING BY CREDIT CARD, INCLUDE EXPIRATION DATE AND BILLING ADDRESS.
CALIFORNIA RESIDENTS (ONLY) ADD 8.25% FOR SALES TAX.



MAC DEPOT

1-800-222-2808

4453 REDONDO BEACH BLVD.
LAWDALE, CA 90250
Canada Toll-Free: 1-800-548-2512

Corporate, educational, and government purchase orders accepted.

Circle 144 on reader service card

A better solution.



Introducing JetInc. from DGR Technologies.
The ink refill unit for your Apple StyleWriter
and Hewlett Packard DeskWriter inkjet printer.

**JET
INC.**

For about one half of the cost of an original printer cartridge, a single **JetInc.** refill unit replenishes your inkjet printer with water-resistant ink that produces clear, crisp, laser-quality impressions – so you leave a good impression. **JetInc.** also introduces definitive color to your inkjet output, to give everyday documents an eye-catching flare. Red, Green, Blue, and Brown refills add the perfect sparkle for spot color or text. Because we designed **JetInc.** with the end-user in mind, you get a quick, easy refilling process that means no mess. In one smooth step the original cartridge is recharged to its normal printing capacity. And, using **JetInc.** will give you the satisfaction of helping to save the environment: All components of **JetInc.'s** product and packaging contain recycled materials. The **JetInc.** cartridge refill is the perfectly practical alternative to disposable printer cartridges.



To Order Call TOLL FREE Monday-Friday 9am to 6pm CST
DGR Technologies accepts MC, Visa, Discover, Pre-Paid, COD, & Wire Transfer.

**Order
Direct**

800-235-9748

DGR Technologies • 1800 Rio Grande, Suite 205 • Austin, Texas 78701 • 512/476-9855 • Fax 512/476-6399
DGR Technologies welcomes domestic and international dealer inquiries. Call for details.

Twin Refill Pack
\$16.99



- Twin Pack Economy
- Permanent Ink
- Sharp & Solid Blacks
- Bright & Vivid Colors
- Extends the life of your inkjet printer cartridge
- Money Back Satisfaction Guarantee

dgr
technologies

Circle 81 on reader service card

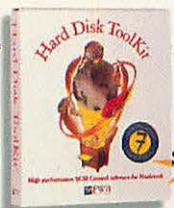
We Take Care Of You

Lowest Prices

Accessories

ABCOM

CARRY CASE CI, CX, SI, IMGWTR.....	82
CARRY CASE SE/PLUS EXTEND KBD.....	86
POWERBOOK CASE.....	72
DUST COVERS from.....	15



\$134

HARD DISK TOOLKIT

Hard Disk Toolkit supports all SCSI hard drives, removables and opticals with complete formatting, partitioning, password protection, encryption, benchmarking, and more. Powerful professional features like high-speed SCSI copy, microcode control, SCSI-2 support and comprehensive diagnostics make Hard Disk Toolkit a "must have" utility for all users.

POCKETHAMMER DRIVE 50 MB.....	587
POCKETHAMMER DRIVE 100 MB.....	792
POCKETHAMMER DRIVE 200 MB.....	1198

APPLIED ENGINEERING

AE HIGH DENSITY 3.5 MAC DRIVE.....	225
QUADRALINK.....	199

ARTICULATE SYSTEM

VOICE NAVIGATOR II.....	565
VOICE IMPACT.....	78
VOICE IMPACT PRO.....	198

FARALLON

MACRECORDER 2.0.....	172
----------------------	-----

KEYTRONICS

MACPRO PLUS.....	139
------------------	-----

LOGITECH

MOUSEMAN.....	79
---------------	----

MOUSE SYSTEMS

LITTLE MOUSE ADB or MAC PLUS.....	74
PHILLIPS & DUPONT.....	146

TRIPLITE

MACDIRECTOR.....	88
------------------	----

VENTANA PRESS

SYSTEM 7 BOOK.....	18
--------------------	----

WACOM

12" X 12" ELECTROSTATIC TABLET.....	838
12" X 12" STANDARD TABLET.....	775
6" X 9" STANDARD.....	519
Full line of Digitizing tablets available.....	CALL

Communications

DOVE

DOVEFAX PLUS.....	355
-------------------	-----

HAYES

PERSONAL MODEM 2400 PLUS.....	148
SMARTMODEM 2400 & SMARTCOM.....	345
ULTRA 9600 MODEM.....	782
SMARTCOM 3.3.....	82

PROMETHEUS

MINIPLUS 2400 V.42 & MacKnowledge.....	128
24/96MSR FAX MODEM (MAXFAX).....	265
9600/9600M PLUS V.32/42 MNP5.....	665
ULTIMA14,400 BAUD MODEM/9600 FAX.....	685



\$148



PERSONAL MODEM 2400 PLUS

Specially designed to simplify communications for the first-time home or business user. Personal Modem Plus products offer a complete PC or Macintosh™ communications solution since they are bundled with Smartcom™ communications software and come with permanently attached computer and telephone cables.



\$128



V.42 MINIPLUS

All the features of modems twice their size at half the cost. 2400 bps data modems with V.42bis/ MNP-5 data compression and error correction, one with 9600 bps send / receive fax, one without. Both offered as complete packages with all the software and cables.

SHARP

EBR-9600 BAUD MODEM MNP5.....	155
-------------------------------	-----

SHIVA

ETHERGATE.....	1289
ETHERPORT.....	285
FASTPATH.....	1985

Storage

CHINON

CDC-431 CD ROM REMOTE DRIVE.....	585
----------------------------------	-----

FWB

POCKETHAMMER 50 MEG.....	587
POCKETHAMMER 100 MEG.....	792
POCKETHAMMER 200 MEG.....	1198

IOEGA

BERNOULLI90 MB TRANSPORTABLE.....	788
CARTRIDGES (90 MEGS).....	144



\$788



90MB TRANSPORTABLE BERNOULLI DRIVE

This design gives the user a virtually crashless drive and one with unlimited growth. Your only limitation is the amount of cartridges purchased. Because the 90MB family has an effective access time of 19ms, it is a viable primary storage device, yet can also be used in backup and archival environments using the backup software included with the drive (can compress 180MB).

MASS MICRO SYSTEMS

DATAPAK 45 REMOVEABLE HD.....	639
DATAPAK 88 REMOVEABLE HD.....	849

MICROTECH

NOVA 200.....	1145
NOVA 320.....	1395

PLI

45 CARTRIDGE.....	79
INFINITY 40 SINGLE W/CARTRIDGE.....	659

RODIME

R45 PLUS REMOVABLE HD.....	598
----------------------------	-----

Monitors & Boards

APPLIED ENGINEERING

CACHE IN.....	185
FASTMATH LG.....	129
QUICKSILVER.....	265

HARRIS LABORATORIES

PERFORMER ACCELERATOR CLASSIC.....	236
------------------------------------	-----

E MACHINES

QUICKVIEW STUDIO.....	1839
QUICKVIEW Z21.....	1839
T16 COLOR PAGE SYSTEM.....	1850
T19 19" COLOR SYSTEM.....	3599
TX 16" COLOR SYSTEM.....	2545

GENERATION SYSTEMS

MAC II, CLASSIC 19" MONO SYS.....	995
MAC II, CLASSIC 15" MONO SYS.....	635

MASS MICRO SYSTEMS

COLOR SPACE.....	Special pricing CALL
DATAPAK.....	639
QUICKIMAGE W/PHOTOSHOP.....	659
RIVAL 19" MONO SYSTEM, MAC II, SE.....	1075

MICRON

MACROCOLOR II 24 BIT VIDEO CARD.....	477
GRAY-SCALE 30 8BIT CARD FOR SE30.....	84
COLOR 30 VIDEO CARD FOR SE/30.....	339
XCEED IICI CACHE CARD.....	235

NEC

MULTISYNC HG SERIES.....	CALL
--------------------------	------

RASTEROPS

24SI ACCELERATED BOARD.....	598
24STV COLOR DISPLAYBOARD.....	1198
8XLI DISPLAY BOARD.....	1299
24XLI DISPLAY BOARD.....	2699
19" COLOR TRINITRON MON.....	Special 2498



EASY ALARMS 1.5

System 7 savvy, Easy Alarms organizes your schedule, maintains your To Do list and reminds you of upcoming events. Advanced features include network-wide calendar access, user scripting, AppleEvents sending and receiving and Notify! Pager support.

NEW FEATURES!!

Printers/Scanners

ABATON

LASERSCRIPT LX PRINTER.....	1599
SCAN 300 COLOR.....	999

BEZIER

BP 4040 LASER PRINTER.....	1399
----------------------------	------

CAERE

TYPIST PLUS.....	469
------------------	-----

CHINON

DS 3000 COLOR SCANNER.....	696
----------------------------	-----

DEST

PERSONAL SCAN & RECOGNIZE.....	669
MACSCAN 3000.....	990

KODAK

DICONIX PRINTER.....	369
----------------------	-----

LOGITECH

SCANMAN SCANNER.....	299
----------------------	-----

MARSTEK

MARS 800-MAC 64 HAND SCANNER.....	299
COLOR ARTIST HAND SCANNER.....	579

MICROTEK

SCANMAKER 1850S SLIDESCANNER.....	2099
SCANMAKER 600GS GREYSCALE.....	1118
SCANMAKER 600ZS COLOR SCAN.....	1459
TRUE LASER/TRUEIMAGE LASERPRTR.....	1299

NEC

COLORMATE PS MODEL 40.....	4999
SILENT WRITER 2 MODEL 90.....	1499

PRIME OPTION

PHOVOS 600 GS SCANNER, PHOTOSHOP WORDSCAN & SHEET FEEDER.....	1795
---	------



\$56

MACINTAX

America's Best Selling Tax Software for the Mac! MacInTax includes: over 80 IRS-approved forms, schedules, and worksheets; on-line help menus to explain IRS rules; IRS audit feature; & FREE support. MacInTax interfaces with MacInTax Personal/1040, & transfers data from federal forms to state forms automatically. MacInTax prints your return ready to send to the IRS! MacInTax even provides tax savings suggestions tailored to your particular situation.

MacInTax State Packages! Only \$42 (each sold separately).



\$78

\$198

VOICE IMPACT / VOICE IMPACT PRO

Voice Impact is the smallest high quality sound digitizer for the Mac. Incredibly small foot print- 2 1/2" by 1 1/4". It records voice, music or any sound directly to your Mac. Ideal for anyone looking for an inexpensive "sound" solution with the highest quality! "Free Sound Editing Package!"

OMS

COLORSCRIPT 100 10P.....	4995
OMS PS 815 LASER 8PPM 20MMz.....	3088
OMS PS 815MR LASER 600x600 dpi.....	4995
OMS PS 410.....	1688

RELISYS

TEFA RA2125.....	855
------------------	-----

UMAX

UMAX COLOR 600.....	1375
---------------------	------

Business

BASELINE PUBLISHING

DATABASE 1.5.....	70
-------------------	----

CAERE

OMNIPAGE 3.0.....	489
-------------------	-----

CLARIS

CLARIS CAD 2.0.....	625
FILEMAKER PRO.....	209
RESOLVE.....	265

CERES SOFTWARE

INSPIRATION 3.0.....	169
----------------------	-----

CHIPSOFT

MACINTAX.....	56
STATES When available.....	42

DELTAPOINT

DELTA GRAPH 1.5.....	117
----------------------	-----

DESIGNCAD

DESIGNCAD 2D/3D.....	378
----------------------	-----



\$174

NEWERA

NUBASE

nuBASE is a sophisticated, relational database environment that allows both novices and experienced programmers to create custom applications quickly and easily. But don't let its ease of use fool you, it's the most powerful relational database available on the Mac.

DEST

RECOGNIZE.....	449
----------------	-----

FISHER

IDEA FISHER.....	384
------------------	-----

INNOVATIVE DATA DESIGN

DREAMS.....	399
MACDRAFT.....	276

MECA

MANAGING YOUR MONEY.....	98
--------------------------	----

MICROSOFT

EXCEL 3.0.....	308
MICROSOFT OFFICE.....	595
MICROSOFT WORD 4.0.....	246

NEW ERA

NUBASE.....	174
-------------	-----

PARAGON

NISUS.....	238
NISUS COMPACT 3.3.....	96

REALITY

WEALTH BUILDER.....	94
---------------------	----

SOFTWARE DISCOVERIES

RECORD HOLDER PLUS.....	68
-------------------------	----

SAS INSTITUTE

JMP 2.0.....	589
--------------	-----

SYMMETRY

KEY PLAN.....	199
---------------	-----

CALL DR-MAC 1-800-825-6227

STRATAVISION 3D 2.0

Already donned with industry awards there's even greater power with version 2.0. Extended modeling gives you more control over objects. Apply realistic textures, set reflectivity and soften shadows with improved ease. Animations of linked objects offer stunning results.

\$719

TIMESLIPS	
TIMESLIPS III 2.0	187
TIMESLIPS TAL MODULE	55
WOLFRAM	
MATHEMATICA 2.0	CALL
WORDPERFECT	
WORD PERFECT 2.01	275
WORDPERFECT OFFICE	88
WORDSTAR	
CORRECT GRAMMER	48
AMERICAN HERITAGE DICTIONARY	48
WORKING SOFTWARE	
QUICK LETTER	84

Graphics & Publishing

ABRACADATA	
DESIGN Interiors/Landscape/Architecture	62
ADOBE	
ENTIRE FONT LIBRARY	Special Price CALL
ILLUSTRATOR 3.2 WITH ATM	358
PHOTOSHOP 2.0	Special Price 495
STREAMLINE 2.0	118
TYPE ON CALL	45
TYPE SET 1 OR 2	62
TYPEALIGN	65

Publish-It! Easy

\$136

PUBLISH IT! EASY 2.1

Publish It! Easy 2.1 is a full featured Desktop Publishing program designed to be your all-in-one answer to page design needs. Complete with: Word-Processing, built-in Drawing & Painting Tools and full feature Page Layout (including one degree rotation of text and graphics). This program can handle the toughest assignments. "Best Page Design Program" of 1991, MacUser, System 7 compatible! Includes File • It!, an advanced built-in data base and mail merge program.

AGFA	
AGFA TYPE 2.1	59
STUDIO SERIES SPECIAL	
any 8 fonts, get 4 studio fonts free	255
TOSHIBA XM-3301 CD DRIVE	
W/ AGFATYPE 2.1	688
ALDUS	
FREETYPE 3.0	388
PAGEMAKER 4.0	489
PERSUASION 2.0	319
ALTSYS	
FONTOGRAPHER	265
METAMORPHIS PROFESSIONAL	88
CLARIS	
MACDRAW PRO	275
DENEBA	
CANVAS 3.0	279
DYNARE	
DYNAPERSPECTIVE	589
FARALLON	
MEDIA TRACKS	189

FRAME	
FRAMEMAKER	589
GOLD DISK	
ANIMATION WORKS	119
LETRASET	
COLORSTUDIO	499
IMAGESTUDIO	138
MICROFRONTIER	
ENHANCE	199
MONOTYPE	
TRUETYPE IMPRINTS	21
DESIGNING REPORTS & Presentations	115
MOTION WORKS	
ADDMOTION	177
MULTI AD SERVICES	
MULTI-AD CREATOR	498
PARACOMP	
FILM MAKER	429
MODEL SHOP 2.0	559
SWIVEL 3D PRO 2.0	429
PIXAR	
MACRENDERMAN & SHOWPLACE	546
MACRENDERMAN OR SHOWPLACE, each	539
QUARK	
QUARKXPRESS 3.1	509

SERIOUS

\$349

SERIOUS

\$209

SERIOUS PROGRAMMER

An object programming system allowing non-programmers to construct their own software. Supports animation, color painting, communications, databases, networking, scanning, sound, spreadsheets, and word processing.

SERIOUS DEVELOPER

A superset of Serious Programmer allowing developers to create their own objects.

SPECIAL UPGRADE OFFER

...CALL FOR DETAILS!

RAY DREAM	
JAG	64
RAY DREAM DESIGNER	592
SPECULAR INTERNATIONAL	
INFIN-D 3D RENDERER	645
STORM	
PICTUREPRESS	119
STRATA	
STRATAVISION 2.0 new version	719
TEXTURES	CALL
SYMMETRY	
MARIAH	89
TIME ARTS	
OASIS	525
OASIS & WACOM TABLET	945
TIMEWORKS	
PUBLISH IT EASY MAC	136

HyperCard's Better Half

Reports 2.0

\$93

REPORTS 2.0

Reports 2.0 turns HyperCard into a true database. Create all kinds of good looking reports, mail-merge letters, labels and complex forms with Reports 2.0 and HyperCard. You can even perform complex data queries. MasterView gives you a visual overview of your stacks in an interactive, spreadsheet-like window. PaperSaver lets you view at different scales, and print at full size, quarter size, or thumbnails to paper or to disk!

Double the space on any Mac disk by shrinking any Mac file or folder an average of 50%.

Disk Doubler

\$46

DISKDOUBLER 3.7

Expand your disk drive capacity. Fast, easy and safe. DiskDoubler dramatically increases the storage capacity of any Mac Drive. "Performance is outstanding," evaluates MacUser, July 1990 (4 1/2 mice rating).

AutoDoubler now available only \$46

VISUAL DEVELOPMENT	
PRESENTER PRO w/MACRENDERMAN	3299
ZEDCOR	
DESK PAINT AND DRAW	98

Networking

ASANTE	
FULL LINE OF PRODUCTS AVAILABLE..CALL	
CARAVELLE	
MAC TO MAC 10 PACK	199
FARALLON	
STAR CONTROLLER 300	889
STAR CONTROLLER ETHERNET	1395
TIMBUKTU 4.0	133
TIMBUKTU REMOTE 2.0	133
INSIGNIA	
UNIVERSAL SOFT PC	195
SOFTAT	295
MICROCOM	
CARBON COPY MAC	57

NISUS

\$96

NEW COMPACT VERSION!!

NISUS COMPACT 3.3

Word Processing for your new PowerBook™. Almost all the power of Nisus 3.06 with less than half the size and cost. Special features for organizing and finding files when you're on the go plus new battery-saver design for disk access.

NUVOTECH	
NUVOLINK SC	359
NUVOLINK II	188
TURBONET DIN-8 or DB9	24
TURBONET ST DIN-8 or DB9	32
TURBOSTAR	869
SITKA	
MACTOPS BUNDLE	179

Utilities/Programming

ADOBE	
ADOBE TYPE MANAGER 2.0	57
AFTER HOURS SOFTWARE	
TOUCHBASE	77
ALADDIN	
STUFF IT DELUXE 2.0	62
ASD	
FILEGUARD 2.7	137
AVERY	
MACLABEL PRO	47
BASELINE PUBLISHING	
EXPOSURE PRO	75
PERSONALITY	58
BERKELEY	
AFTER DARK	28
MORE AFTER DARK	28
AFTER DARK/MORE AFTER DARK BDL	48

CE SOFTWARE	
DISKTOP 4.0	62
QUICKKEYS 2.2.1	92
TILES	62
ESSENTIAL SOFTWARE	
EASY ALARMS	29
FWB	
HARD DISK TOOLKIT	134
IMAGEN	
ULTRASCRIP PLUS	285
INSIGHT DEVELOPMENT	
MACPRINT	89
LANGUAGE SYSTEMS	
FORTAN WITH MPW	498
WILD THINGS	119
MAGNA	
EMPOWER 1 SECURITY	79
EMPOWER 2 SECURITY	142
MICROCOM	
VIREX 3.0	59
VIREX 3.0 10 PACK	345

TILES

\$62

NEW!

TILES

A better way to organize your work. No need to search through mazes of folders, launch a myriad of applications located on different servers, or try and gather all the pieces of that big project together again. Tiles remembers what you work on and where it is—just double click. Tiles puts everything you need to work at your fingertips, so you spend less time getting back to work and more time getting work done.

MICROSPOT	
MACPALETTE II	55
MULTI AD SERVICES	
MULTI-AD SEARCH	108
NINE TO FIVE SOFTWARE	
REPORTS 2.1	93
SALIENT	
DISK DOUBLER	46
SERIOUS	
SERIOUS DEVELOPER	349
SERIOUS PROGRAMMER	209
SOFTWARE COMPATABILITY	
SOFTWARE BRIDGE	59
SYMANTEC	
NORTON UTILITIES 1.1	86
SAM 3.0	63
SUM II	96
THINK C 5.0	196
SYMMETRY	
ACTA ADVANTAGE	49
WORKING SOFTWARE	
LAST RESORT	36

Policies

- * Visa, Mastercard & Amex accepted.
- * Credit card is not charged until order is shipped.
- * California residents add 8.25% sales tax
- * Hours: Mon-Fri 9:30-11 EST
Sat 11-6 EST
- * Call (818) 504-1800 FAX (818) 504-9380
- * Compatibility not guaranteed.
- * All prices & policies subject to change without notice.
- Shipping**
- * \$3. Airborne Overnight continental US. Hardware over 10 lbs will be shipped ground.
- * Same day shipping. Some areas may require an extra day.
- Returns**
- * Call for R.A. number before return. Restocking fee may apply.
- *Money Back Guarantee**
- * Most products have a 30-day money back guarantee. Please inquire when you order. Retain original packaging to ensure proper credit.

International Dealer Program

- We ship worldwide
- Call about our special pricing & services

Corporate Accounts:

- Open an account within 24 hours
 - Volume discount pricing
 - School purchase orders accepted
- Fed. ID# 95-4183196

Visit our booth
#343 Moscone at
MacWorld Expo

Dr Mac

1-800-825-6227 from the U.S. & Canada

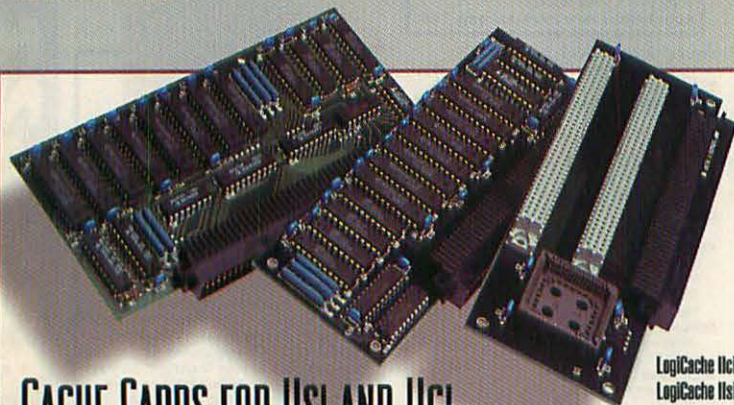
Fax: (818) 504-9380 or (818) 504-2159

11050 Randall Street, Sun Valley, CA 91352 • (818) 504-1800

CALL DR-MAC 1-800-825-6227

I FEEL THE NEED... THE NEED FOR ***SPEED!***

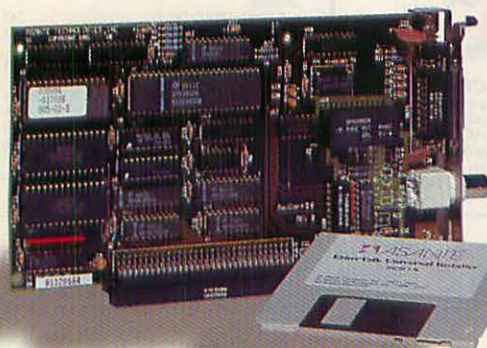
AT THIRD WAVE, ALL OUR PRODUCTS OFFER THE MAXIMUM IN PERFORMANCE AND VALUE.



CACHE CARDS FOR IIsi AND IICI

Speed up your IIsi or IICI by 40 to 80%! LogiCache IICI uses the IICI cache slot; LogiCache IIsi plugs directly into IIsi slot or into Dual Slot Adapter to allow use with other IIsi expansion cards such as video or Ethernet. Both cache cards have 64K of SRAM for maximum performance.

LogiCache IICI	159.00
LogiCache IIsi	169.00
IIsi Dual Slot Adapter	59.00
20 MHz Math chip for Adapter	89.00



ASANTE ETHERNET FROM \$199

Thick/Thin or Thick/10T	199.00
Thick/Thin/10T, 64K	269.00
Apple AUI/Thin or 10T	269.00
10T 12 port hub	899.00
Thick to 10T adapter	109.00
Asante SCSI Ethernet	349.00
Dayna Etherprint	349.00
Dayna Etherprint Plus	619.00
18MHz 882 option for LC Ethernet	49.00
20MHz 882 option for IIsi Ethernet	69.00

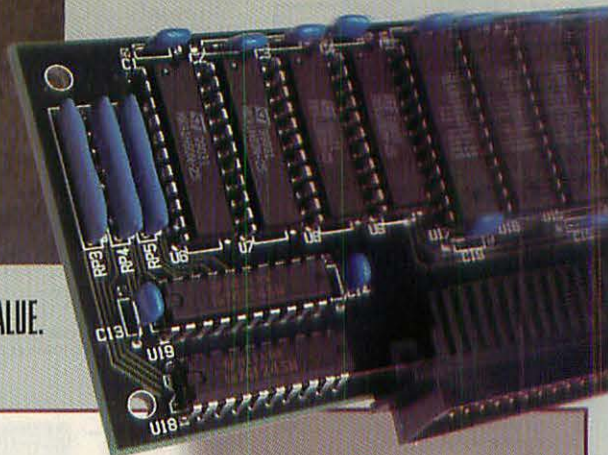
Rated Number One by MacUser
5 Year Warranty

DayStar PowerCache 40 MHz	895.00
DayStar PowerCache 40 MHz w/882	1049.00
DayStar PowerCache 50 MHz	1299.00
DayStar PowerCache 50 MHz w/882	1549.00

Radius Rocket	1899.00
TokaMac 040 Accelerator for LC	CALL
TokaMac 040 Accelerator for IIsi/SE 30	CALL
TokaMac 040 Accelerator for IICI	CALL
16 MHz 68882 CoProcessor for LC	99.00
16 MHz 68882 CoProcessor for Classic II	119.00
16 MHz 68882 CoProcessor for PowerBook 140	249.00

TokaMac 040 Accelerators
rated faster than the Quadra in
three out of four benchmarks.
MacWeek—10/22/91

ACCELERATORS AND MATH COPROCESSORS



MACINTOSH CPUs

**Classics to Quadras!
PowerBooks! Printers!**

Call for pricing on new Macs.

We also accept trade ins — convert your older Macintosh system into the latest CPU. We can help you design your entire system. Just give one of our sales consultants a call.

Import high quality still video images to your Mac.
Store up to fifty images on 2 inch diskettes, camera
connects to TV/VCR for previewing or taping.

XapShot camera only	429.00
XapShot w/24 bit frame grabber	749.00
Demo diskette	15.00

We carry the complete line of Canon still video.



CANON XAPSHOT



THIRD WAVE

C O M P U T I N G
1 (8 0 0) 2 8 4 - 0 4 8 6

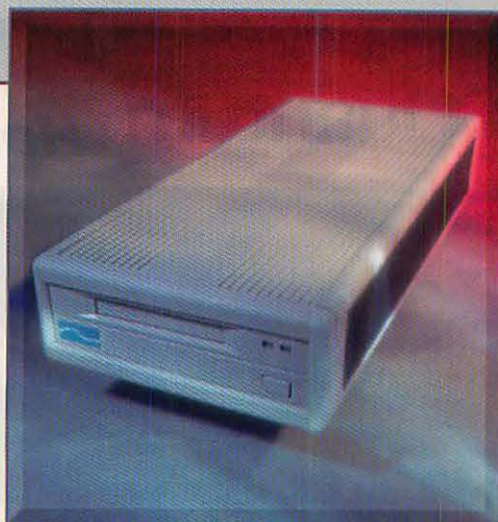


DAT

All of our DAT drives include a copy of Retrospect 1.3, one DAT cassette, one DAT cleaning cassette, and your choice of SCSI cable.

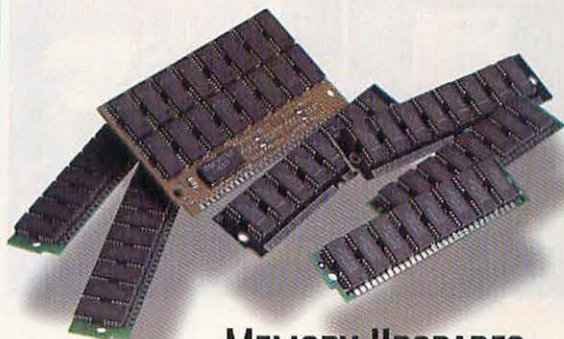
Drive Prices guaranteed to be at or below listed prices. Call for latest.

SyQuest, Optical, and DAT available internally for Quadra 800!



STORAGE SYSTEMS

A MacWorld Favorite! "Quietest" — March '91
"Highest SCSI Eval. Read/Write" — Sept '91
"One of the best manuals" — Sept '91



MEMORY UPGRADES

MEDIA AND SOFTWARE



60 MB Tape for Teac	17.00
150 MB Tape for Teac	24.00
SyQuest 45 MB cartridge	89.00
SyQuest 88 MB cartridge	125.00
DAT cassette 60 meter	19.00
DAT cassette 90 meter	38.00
Optical cartridge (ISO) 512 kb/sector	125.00
Optical cartridge (ISO) 1024 kb/sector	125.00
Optical cartridge for Tahlit	289.00
Optical cartridge 128 MB	99.00
XapShot video diskette	10.00
Maxima 2.0 memory mgmt. software	45.00

DISK DRIVES

	INTERNAL	EXTERNAL
52 MB	239.00	329.00
105 MB	339.00	429.00
210 MB	829.00	719.00
320 MB	1099.00	1199.00
425 MB	1299.00	1399.00
650 MB	1399.00	1499.00
1000 MB	1999.00	2099.00
Portable CD ROM (Toshiba) includes Nautilus CD.		579.00

REMOVABLE MEDIA

OptiDisk 800 It's a SONY!	2895.00
OptiDisk 1000	3695.00
OptiDisk 128 'NEW'	CALL
45 SR (SyQuest) w/cartridge	475.00
45 DR (Dual SyQuest) w/2 carts.	889.00
88 SR (SyQuest) w/cartridge	889.00
88/45 DR (Dual SyQuest) w/2 carts	1199.00
150T Teac Tape Streamer	595.00
DATadrive 2GB	1395.00
DATadrive 5GB	1595.00

Third Wave memory for every Mac.
Built in our own facility.

1,2,4,8, and 16 MB SIMMs

Logica SIMMpack for Classic 0, 1, or 3 MB
LC and Quadra VRAM SIMMs
PowerBook 2, 4, or 8 MB

Prices change often, call for latest.



SuperMac, RasterOps,
Radius, Ikegami, Seiko and Sony.
13, 16, 19, and 21 inch monitors
Accelerated Video cards.
Call for latest prices!

DISPLAY SYSTEMS

**TOLL-FREE
TECHNICAL SUPPORT
1-800-888-8779**

MacLand®



America's Largest Macintosh Hardware Source

Quantum Hard Disk Drives



INTERNAL

52MB.....	\$229
105MB.....	\$339
210MB.....	\$639
425MB.....	\$1199

EXTERNAL

52MB.....	\$289
105MB.....	\$389
210MB.....	\$689
425MB.....	\$1299

SyQuest TECHNOLOGY

Removable Hard Disk Drives

44mb Removable Drive	\$399*
88mb Removable Drive	\$599*

*Cartridge Not Included

CARTRIDGES	44MB	88MB
Single Cartridge	\$66	\$109
5 Pak - Each.....	\$64	\$105
10 Pak - Each.....	\$62	\$99



MacLand®

Combination Units

SyQuest 44/SyQuest 44	\$799
SyQuest 44/Quantum 52	\$699
SyQuest 44/Quantum 105	\$799
SyQuest 44/Quantum 210.....	\$1,099
SyQuest 44/Quantum 425.....	\$1,499
SyQuest 88/SyQuest 88.....	\$1,199
SyQuest 88/Quantum 52	\$899
SyQuest 88/Quantum 105	\$999
SyQuest 88/Quantum 210.....	\$1,299
SyQuest 88/Quantum 425.....	\$1,699



To Order Call 1-800-888-8779 Customer Service Call 1-800-388-3118
 MacLand, Inc. 4685 S. Ash Ave., Tempe, AZ 85282 (602) 820-5802
 24 Hr. Fax: (602) 345-2217

Printer Sale!



Microtek

TrueLaser

- 300dpi •6ppm
 - PostScript® Clone
 - 35 Resident TrueType Fonts
 - RISC Processor
- \$1,349**



QMS

PS410

- 300dpi •35 PostScript® Fonts
 - Auto-Switching: Mac/PC
 - 4 ppm Print Speed
- \$1,699**

QMS

NEW!

QMS

815MR

- 300 or 600 dpi
 - PostScript® Compatible
 - Auto-Switching: Mac/PC
 - 8 ppm Print Speed
- \$4,250**



NEC

Silentwriter 2 MODEL 90

- 300dpi •35 PostScript® Fonts
 - 6 ppm Print Speed
 - 2mb RAM
- \$1,599**

NEC



RasterOps

CorrectPrint 300

- 300dpi •Dye-Sublimation
 - Photorealistic Color Printer
 - Introductory Price
- \$7,499**



Hewlett Packard

Deskwriter Color Deskwriter C

- \$419** **\$769**
- Thermal Inkjet Method •300dpi
- Letter, Legal, Envelope, Transparency



QUME

MacPublisher

- RISC Processor •2MB RAM
 - PostScript® Compatible •6ppm
 - 300dpi
- \$1,599**



QUME

CrystalPrint Pub II

- RISC Processor •6ppm
 - PostScript® Compatible
 - 3MB RAM •300dpi
- \$1,995**

Qume.



QUME

CrystalPrint Express

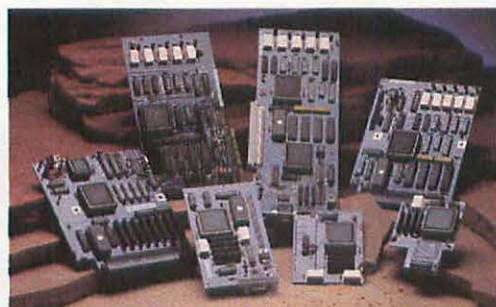
- RISC Processor •12ppm
 - 300dpi
 - PostScript® Compatible
 - 3MB RAM
- \$2,995**

To Order Call 1-800-888-8779 Customer Service Call 1-800-388-3118
MacLand, Inc. 4685 S. Ash Ave., Tempe, AZ 85282 (602) 820-5802
24 Hr. Fax: (602) 345-2217

MONITORS



Lapis Technologies, Inc.



ColorServer LC-17..\$379	ColorServer LC-21..\$509
ColorServer	ColorServer
PDS/30-17 .....\$379	PDS/30-21 .....\$509
ColorServer II-17.....\$379	ColorServer II-21.....\$509

ORION TECHNOLOGIES

MacScan ULTRA

•14" Color Multiscan Monitor

Your Price\$369

GOLDSTAR

1450 Plus

•14" Color Monitor

Your Price\$349

SONY

CPD-1304

•14" Trinitron Color Monitor

Your Price\$599

SEIKO

CM1445

•14" Trinitron Color Monitor

Your Price\$589

E-MACHINES

T-16 Trinitron

•16" Color/8 Bit Bundle

Your Price\$1,995



ORION
TECHNOLOGIES



Full Page
Display/Card
Bundle

\$489

Two Page
Display/Card
Bundle

\$899

MAGNAVOX COLOR MONITOR BUNDLES

14" Color Monitor/ 24 BIT Video Card (II)\$929

14" Color Monitor/ 24 BIT Video Card (SE30).....\$1,069

20" Color Monitor/ 8 BIT Video Card (II).....\$1,999

20" Color Monitor/ 8 BIT Video Card (SE30)\$1,999



MAGNAVOX

9CM080

•14" Color Monitor

Your Price.....\$469

MagnaScan/20

•20" Color Monitor

Your Price.....\$1499

**TWO YEAR
WARRANTY ON BOTH!**



**NEW! From
ORION Technologies**

MacScan ULTRA

14" Color
Multiscan Monitor

\$369



MICROTEK

600zs Color Scanner

•600dpi Scanning

•Includes Photoshop 2.0

Special Price

\$1399

NEW!

MICROTEK

ScanMaker1850s

•1850dpi Slide Scanner

•Includes Photoshop 2.0

Special Price

\$2,199

To Order Call 1-800-888-8779 Customer Service Call 1-800-388-3118

MacLand, Inc. 4685 S. Ash Ave., Tempe, AZ 85282 (602) 820-5802

24 Hr. Fax: (602) 345-2217

ASANTE

MEMORY CONNECTIVITY

Ethernet Cards for Macintosh®

MACCON+IIE64 (Mac II Thick/Thin w/64k)	\$299
MACCON+IIE64 (Mac II Thick/10BaseT w/64k) ...	\$299
MACCON+LC w/ FPU (MacLC Direct Slot: Thin/10BaseT)	\$379
MACCON+30IET (Mac SE30 Thick/10BaseT)	\$299
MACCON+30IET64 (Mac SE30/SI 10BaseT w/64k)	\$299

IRION
TECHNOLOGIES

Ethernet Adapter Cards...Lifetime Warranty!

Labus Thin/10T/AAUI	\$219
IE/30 10T/Thin	\$219
si 10T/Thin (includes: PDS/30 Adapter w/ FPU Socket)	\$279
C 10T/Thin	\$219

**AE APPLIED
ENGINEERING**

MacRam Classic 1 Meg	\$125
MacRam Classic 3 Meg	\$269
Datalink/Mac™ (Int. 2400 baud modem)	\$199
QuadraLink™	\$199



PSI Integration

PSI MultiColor 8/16 bit Color LC Video SIMM	\$105
Crunch-it! 68882 FPU for LC	\$119
LC Bundle MultiColor and Crunch-It! bundled	\$199
030 Adapter Card Ilsi Extender Card w/ FPU & Cache socket	\$129
Cache-It! 64k, 20MHz Cache SIMM	\$199
Cache-It! Bundle 030 Adapter Card and Cache-It! Bundle	\$309
COMstation 1 Modem Ext. 9600bps s/r fax, 2400bps s/r data	\$239
COMstation 2 Modem Ext. 9600bps s/r fax, 2400bps s/r data w/ V.42, V.42bis, V.23, MNP5	\$289
COMstation 4 Modem Ext. Networkable 9600 s/r fax, 2400 s/r data	\$459

MacLand®

SIMMS

1mb 100ns

\$32

1mb 80ns

\$39

4mb **\$159**

FX Simms

1mb 80ns.....**\$59**

4mb 80ns.....**\$240**

Other Great Deals!

Kensington Turbo Mouse ADB	\$109
MacPro Keyboard	\$139
Daystar FastCache Ilici	\$269
ZoomExt. 24/96 S/R Fax Modem	\$149
Abaton Interfax 24/96 Modem	\$299

Payment Methods Accepted:



C.O.D.'s payable with Cashier's Check or Money Order.

MacLand

1234 1234 1234 1234
JOB MACINTOSH

Instant Credit NOW!

With the MacLand Credit Card you can pay for your purchases in easy monthly installments. Credit applications can be taken over our toll free 800 number. Most applications are approved the same day! Call today and get the details on how to obtain your own personal MacLand Credit Card.

ATTENTION:

Businesses,
Government,
Educational Inst.,
Military

- Fax us your P.O. for same day shipment!
- P.O.'s accepted on approved accounts.
- All shipments are FOB origin.
- Prices do not include freight.
- Favorable terms offered to established accounts.
- LEASING option available... Call for details and pricing!

To Order Call 1-800-888-8779 Customer Service Call 1-800-388-3118

MacLand, Inc. 4685 S. Ash Ave., Tempe, AZ 85282 (602) 820-5802

24 Hr. Fax: (602) 345-2217

Circle 40 on reader service card

100% FINANCING

For purchases of \$1000 or More for Businesses with Approved Credit

MACCENTER™

The Center Of The Macintosh Universe™

**Quadras & PowerBooks
IN STOCK!**
Call for Pricing

microLaser Turbo

This printer is so fast it gets speeding tickets!

microLaser Turbo CALL!
9 pages per minute

- Weitek RISC processor
- Postscript Level 2
- 35 Adobe scalable fonts
- 2.5 Meg RAM standard
- Upgradable to 10.5 Meg RAM
- Mac & PC compatible
- 3 Interface Ports: Appletalk, RS-422, RS-232-C
- Automatic switching between ports - all ports are hot

**microLaser Turbo XL CALL!**
16 pages per minute

- Automatic emulation switching
- Free Paper Tray Management Software
- Optional envelope feeder
- Optional 500 sheet second paper drawer
- Hewlett-Packard LaserJet Series II emulation
- 6 Times Faster Than Other Postscript Printers

APPLETALK INCLUDED
WE STOCK ALL ACCESSORIES & SUPPLIES
110 & 220 Volt MICROLASERS AVAILABLE**NEW! microLaser Plus**
The microLaser is now the microLaser Plus, with a 9 page per minute engine!

PS17	\$47/mo*	\$1265
PS35	\$58/mo*	\$1565
XL PS17	\$90/mo*	\$2425
XL PS35	\$100/mo*	\$2725

UPGRADE
YOUR MICROLASER OR MICROLASER XL TO A TURBO
CALL!**SIMMS**
4 Meg SIMMS (with trade in)
\$115
1 Meg SIMM
Call!
(80ns)**SYQUEST**
\$68
Per 45 Meg Cartridge
\$115
Per 88 Meg Cartridge

POSTSCRIPT PRINTERS

LabelWriter II/ II Plus	\$189/\$299
AddressWriter Envelope Printer	\$479
PLP11, PLP15	4/8 ppm Call!
BLP11, BLP15, BLP Elite	4/8 ppm Call!
Writemove, WriteMove	Call!
NEC Silentwriter2 Model 90	6 ppm • 16 MHz \$1549
Silentwriter2 Model 990	8 ppm • 32 MHz \$2895
PS 410	4 ppm • 16 MHz \$1645
PS 815MR, PS 825MR	8 ppm • 20 MHz 600 dpi Call!

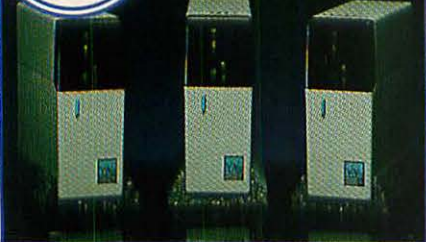
We Stock Toner and All Accessories for the Printers We Carry.

SCANNERS

Caere TYPIST	\$465
Sharp	Call!
JX-320, JX-450, JX-600	Call!
Microtek 600ZS (600 DPI)	\$1399

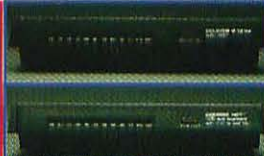


Buy this scanner - get an EMAC Silhouette trackball for \$20!

Abaton Scan 300/Color
\$899
\$1295 w/PhotoShop**Adobe Photoshop 2.0**
\$489 SPECIAL**UMAX UC630**
with Photoshop 2.0 and WordScan
\$1395**Viva**

DATA MODEMS

2400 bps Computer Peripherals, Inc. 5 Year Warranty	
Viva 24	\$79
Viva 24m (MNP 5)	\$125
Global Village Teleport	\$179
Prometheus	\$129
ProModem 2400Mini Plus V.42bis	\$139
9600/14,400 bps Computer Peripherals, Inc. 5 Year Warranty	
Viva 9642e V.32, V.42, V.42bis	\$479
Hayes Ultra 9600 V.32, V.42, V.42bis	\$695
US Robotics Dual Standard V.32bis	\$895

US Robotics Courier
"Fastest V.32bis modems" - InfoWorld
\$695**NEW LOW PRICE!**
DoveFax
\$249

FAX MODEMS

Abaton InterFax 24/96	Networkable! Ask for Details.	\$279
DoveFax		\$249
DoveFax Plus		\$325
DoveFax Lan		Call!
Global Village TelePort		\$179
TelePort PowerPoint V.32		Call!
Prometheus 9600M Plus V.32, V.42, V.42bis		\$599
Ultima 14.4/9600 V.32bis, V.42, V.42bis		\$689
UDS FastTalk FAX32 V.32, V.42, V.42bis		Call!

800-950-3726
FAX 512-476-3726
International Orders 512-476-7466

MACCENTER™

The Center Of The Macintosh Universe™

**MACINTOSH
SYSTEMS**
MacCenter Buys and
Sells New and Used
Systems

CLASSIC ACCELERATION!

Tired of the big Macs kicking sand in your face? Get a **Classic Accelerator!**™ with the unparalleled speed, power and productivity of the 68030 for the Mac Classic! It has it all: 16 MHz 68030 CPU, 20 Megabytes of RAM using 4 meg SIMMs, optional 68882 co-processor, System 7.0 compatibility, bootable RAM Disk, optional video adaptors permitting use of up to two page monitors, and optional Virtual 3.0 from Connectix. And now with new low pricing, it's a better deal than ever before!

Classic Accelerator!™ Faster than the Classic III! \$569

Your SE, Plus, 512K growing moss on it's north side? Get the accelerators MacWorld called the "Best Value" in compact Mac Acceleration!

SE 16 MHz 68030 Faster than most 25's \$399
SE 25 MHz 68030 Faster than most 33's \$679

NEWLIFE™



ONE CARD FITS ALL!

DayStar again leads the Mac world by delivering incredible power, convenience and cross-platform transportability for the Mac. Buy **one card** now and transfer it to your new Mac when you trade up. Triple your performance. Optional math coprocessor available.

PowerCache 33 MHz, 40MHz & 50 MHz available for Mac II, IIx, IIfx, IIfx, IIsi, LC, & SE/30!

PowerCache 33 MHz \$699
PowerCache 40 MHz \$895
PowerCache 50 MHz Call!
SCSI PowerCard \$995

FastCache Card For Both the IIfx & IIsi \$269 & \$299

RAM PowerCard

DayStar's RAM PowerCard will make your disk intensive tasks **scream!** Place up to 16 standard 1 Meg, 4 Meg or 16 Meg SIMMs on this NuBus card for up to 256 Megs of memory.

RAM PowerCard \$499

REMOVABLE DRIVES

EAGLE™

The Only Removable Drives With A Five Year Warranty!

Eagle SyQuest \$499
Eagle 88 \$795

All Eagle Drives include a Metal Case, a Universal Power Supply, 15 Megs of Shareware and are available with a 5 year warranty!

PLI Infinity 40 Turbo Call!
Infinity 88 Turbo \$895

Iomega Bernoulli 90mb Cartridges for \$145 \$799

MONITORS

Ikegami CT20" Sony Trinitron

w/ 8 bit card \$2565
w/24 bit card \$2895
w/24 bit accelerated **Call!**

NEC FG Monitors Call!

RasterOps Systems Call!

Seiko CM-1445 14" \$589
with RasterOps 245 \$979
with RasterOps 264 for SE/30 \$1175

HARD DRIVES

Five-Year Warranty!

		Int	Ext
385 mb	4.4 ms	\$999	\$1099
765 mb	4.6 ms	\$1399	\$1499
1.2 Gig	4.1 ms	\$1999	\$2099
1.5 Gig	4.1 ms	\$2599	\$2699
1.6 Gig	11.5 ms	\$2899	\$2999
2 Gig	3.9 ms	\$3399	\$3499

Drives are SCSI-2, System 7.0 & A/UX compatible, carry a Five-Year Warranty, include brackets or metal cases, universal power supplies, cables, formatting software and 15 MB of shareware.

Thirty-Day Money Back Guarantee!

MacCenter™ also carries fine drives from GCC, Quantum, Hewlett-Packard, Micropolis and Seagate.

OPTICAL CARTRIDGES 512K & 1024K \$125

ADVANTAGES OF DEALING WITH THE CENTER OF THE MACINTOSH UNIVERSE

- PEOPLE ANSWER OUR PHONES. We don't like automated answering systems. Call and talk to someone, instead of some thing.
- NO SURCHARGE OR MINIMUM with MasterCard and Visa.
- YOUR CREDIT CARD IS NOT CHARGED until your order is shipped.
- PERSONAL CHECKS, COMPANY CHECKS, money orders and cashier's checks are accepted. Money orders and cashier's checks clear immediately; please allow ten days for personal and company checks to clear.
- APO AND FPO ORDERS are accepted with no minimum or surcharge.
- PURCHASE ORDERS: Educational, Government and Institutional purchase orders are accepted with thirty (30) day terms. Corporate purchase orders are accepted with 30 day terms upon credit approval. There is no minimum or surcharge for purchase orders.
- INTERNATIONAL ORDERS: We accept MasterCard, Visa, US money orders, US cashier's checks, wire transfers, and letters of credit (upon approval) for orders in excess of \$100,000. We do not require minimum orders or impose a surcharge for international orders, whether placed by mail, fax or telephone.
- NO SALES TAX, except for Texas residents.
- SHIPPING: US shipments (including Alaska and Hawaii) are by UPS and Airborne Express. Canadian shipments are by Airborne Express and TNT. Foreign shipments are delivered by the most cost effective delivery service. We will ship by any other carrier, at a customer's request.
- MONEY BACK GUARANTEE: Most products carry a manufacturer's 30 or 60 day money back guarantee. Please ask for details when ordering.
- ALL PRICES, PROMOTIONS AND PRODUCT AVAILABILITY are subject to change without notice. We regret we cannot be responsible for typographical errors and cannot guarantee compatibility of all products.
- ALL RETURNS MUST HAVE AN AUTHORIZATION NUMBER. Please call 512-476-7466. All returns or refused shipments are subject to a restocking fee.
- FREE CATALOG when you send in your reader service card.
- HOURS: 8:00 am - 8:00 pm CST M-F
10:00 am - 4:00 pm CST Saturday
Sunday: Call, you may get lucky.

MacCenter™
812 San Antonio Street, Suite 406 • Austin, Texas 78701-2224

**E-Machines
T16
Call!**

**SuperMac
19" SuperMatch
\$1799**

**WE WILL NOT
BE UNDERSOLD!**

E-MACHINES

**APPLE'S 16" MONITOR OF CHOICE
FOR THE QUADRA 700 AND 900!**

Rated #1 three years in a row by MacUser!, the T16 and now the E16 are the industry standards.
We will meet or beat any of our mail order competitor's deliverable prices for in-stock items.

ColorPage T16, E16, TX & T19 **Call!**
Futura EX, SX/8, SX, & MX **Call!**

SUPERMAC

19" Platinum Monitor (Grey Scale/Mono) \$999
Spectrum/8*24 PDQ \$999
Monochrome Card \$349

VideoSpigot LC, IIsi, & NuBus **Call!**
VideoSpigot Pro IIsi, & NuBus **Call!**

800-950-3726
FAX 512-476-3726
International Orders 512-476-7466



MacProducts USA

Since 1985

128MB OF STORAGE FOR ONLY \$79. THE NEW \$1499 MAGIC 128REM OPTICAL!
128MB of storage on a removable 3.5" disk! No bigger than a floppy! MacProducts does it again with a price of only \$1499



Magic 45R \$449

Magic 88R \$599

SyQuest Mechanisms

SOFTWARE



Quark XPress
NEW! Version 3.1
\$539

System 7 \$90

	BUY	LEASE
Aldus Gallery Effects	\$239	.....\$7
Claris Resolve NEW!	\$289	.....\$8
FileMaker Pro.....	\$199	.....\$6
Liaison.....	\$269	.....\$8
Microsoft Word.....	\$229	.....\$7
MiniCAD +	\$499	.....\$15
InfiniD 3D Modeling	\$669	.....\$20
Norton Utilities	\$87	.....\$3
PageMaker 4	\$489	.....\$14
PhotoShop 2.0	\$569	.....\$17
Soft PC /EGA AT Bundle.....	\$335	.....\$7
Symantic Anti Virus 3.....	\$64	.....\$2
Symantic Utilities Mac.....	\$95	.....\$3

MAGIC CPU & PRINTER MEMORY



1 MB SIMMs from

\$29

Lifetime Guarantee

	BUY	LEASE
1MB SIMMs 60 - 120ns...from	\$29	.....\$1
2MB SIMMs	\$85	.....\$2
4 & 16MB SIMMs	\$149/\$799	.....\$6
MAC LC 8-bit Video RAM.....	\$79	.....\$3
Portable RAM 1-8 MB.....	Call	.....Call
Classic Upgrade 2/4MB	\$49/\$99	.....\$2
GCC PLPII/S 1MB.....	\$69	.....\$2
HP 1/2/4MB.....	\$99/\$179/\$239	.....\$3
LZR 960 2/4/8MB Upgrade.....	Call	.....Call
QMS 2/4MB.....	\$199/\$359	.....\$6
TI 1MB RAM Upgrade.	\$75	.....\$3



MAGIC

SIMMs

1MB SIMMs

from \$29

HARD DRIVES AND STORAGE

BUY LEASE



*MagicDrive
Extended
Warranty
Available
\$75/ year

Drive mechanism prices.
2 year warranty included.

Internal Kit \$29 • External Case Kit \$99

40MB Hard Drive	\$199	.....\$6
52MB Quantum low profile	\$239	.....\$8
105MB Quantum low profile.....	\$369	.....\$14
210 MB Quantum	\$699	.....\$24
300MB Seagate*	\$1399	.....\$45
300MB Wren Runner*	\$1650	.....\$54
600MB Seagate*	\$1899	.....\$60
600MB Wren Runner*	\$2199	.....\$69
1.2GB Seagate*	\$2695	.....\$85

MAGICDRIVE ACCESSORIES

Double-Up compression	\$175	.....\$6
Magic SCSI II Accelerator	\$899	.....\$27



"The Magic 45 is one of the best SyQuest drives available, offering high speed and high quality."
- MacUser ****

MAGIC SYQUEST REMOVABLE DRIVES

Includes 2 Year Warranty and the Magic 30 Day Money Back Guarantee
40 watt power supply, Cable & Software.
Magic SyQuest 45R.....\$449\$14
Magic SyQuest 88R.....\$599\$24
SyQuest Cart 45MB

\$69\$2
SyQuest Cart 88MB

\$119\$4



Magic 128MB REM
• 35ms access time
• 9ms fast access mode
• 40watt power supply
• One Year Warranty
• Removable 3.5" disks
• Magic Reliability
• \$1499

MAGIC REMOVABLE OPTICAL DRIVES

The 128MB REM has a seek time of less than 35ms and a burst mode of 9ms.
Includes MagicDrive case with a 40watt power supply, SCSI cable, software, and One Year Warranty. Internals available for Mac Quadra 900 and PC users.
Magic 128MB REM.....\$1499\$45
Magic 128REM 3.5" Cart.....\$79\$3
600 MB Ricoh ISO.....\$2599\$78
600 MB Sony ISO

\$3199\$96

1 GB Tahiti Maxtor

\$3995\$120

Optical Cartridges.....CallCall



MagicTape 60
"Fastest in it's class"
- MacUser ****½

MagicTape 1.3
"The winner in the
DAT (1.3GB) category"
- MacWorld

MAGICTAPE BACKUP

Includes Retrospect, 2 year warranty, & Magic 30 Day Money Back Guarantee.
40 watt power supply, Cable & Software
MagicTape 150MB

\$699\$21

MagicTape 525MB

\$999\$30

MagicTape 1.3GB DAT

\$1695\$51

MagicTape 2.0GB DAT

\$1695\$51

MagicTape 2.4GB 8mm

\$2895\$87

MagicTape 5.0GB 8mm

\$4499\$135

CD ROM DRIVES

Magic CD ROM (Toshiba)

\$529\$19

Many CD-ROM software titles available!

STORAGE OPTIONS



Bernoulli Removable 90

\$969\$29

Pinnacle REO130 Optical

\$1849\$81

PLI Infinity Turbo 88

\$899\$41

Microner 88 Removable.....

\$899\$36

UK FAX 800-891-742 • SINGAPORE 65-287-5181 • CANADA 800-624-9307 • USA 1-800-622-8721

LEASING: Prices quoted reflect 48 month lease based on credit approval. Minimum \$50 month lease. Terms available from 24 to 60 month periods.

MACPRODUCTS USA CARRIES OVER 9,000 PRODUCTS FOR YOUR MACINTOSH

Affordable leasing available for the entire MacProducts USA inventory. Leasing prices are denoted in the gray shaded area.

MAGIC MODEMS & FAX MODEMS BUY LEASE



Magic 2400
Baud Modem \$69

MAGIC 2400/1200/300 BAUD MODEM.
100% Hayes compatible.
Includes 2 year warranty.\$69.....\$3

MAGIC 2400/9600 SENDFAX MODEM
100% Hayes & Group 3 compatible
Includes 2 year warranty\$99.....\$3

MAGIC 2400/9600 FAXMODEM
100% Hayes & Group 3 compatible
Includes 2 year warranty\$149.....\$6

MAGIC 2400 V.42 BIS MNP-5 MODEM
2400 V.42 bis MNP-5 Modem. Transmit
data up at speeds up to 9,600 baud.
Includes 2 year warranty\$149.....\$6

MAGIC 9600 V.32/V.42BIS MNP-5 MODEM
Transmit data at speeds up to 38.4k baud.
2 year warranty\$399.....\$12



Magic 2400 V.42 bis
MNP-5 Modem \$149



MAGIC 2400
2400 Baud Modem
2 Year Warranty \$69

MAGIC 9600 TURBO
V.32/V.42bis MNP-5 Modem
38.4k Baud. Software Included \$399

MACINTOSH SYSTEMS BUY LEASE



THE NEW MAC'S! Call for pricing!

Macintosh PowerBook 100...Call...Call

Macintosh PowerBook 140...Call...Call

Macintosh PowerBook 170...Call...Call

Macintosh Classic 4/40\$1237\$37

Macintosh Classic II.....Call...Call

Classic II or LC 68882\$99\$3

Macintosh LC\$1625\$54

Macintosh IIsi\$2299\$72

Mac IIsi 2 Slot Adapter\$49\$2

Macintosh IIfx\$2850\$98

Macintosh Quadra 700.....Call...Call

Macintosh Quadra 900.....Call...Call

Quadra VRAM\$49\$2

Extended Keyboard\$99\$3



NETWORKING SOLUTIONS BUY LEASE



MacProducts carries networking solutions
from APPLE, ASANTE, CAYMAN,
SHIVA, FARALLON, SITKA, MORE

MagicNet (localtalk).....\$19\$1

Magic EtherNet.....\$199\$6

Farallon PhoneNet.....\$30\$1

VIDEO SOLUTIONS

"For a good deal on 19-
inch Ikegami...check out
the MacProducts Magic-
View"- MacWorld Oct 91



Magic 20" Trinitron
Color Monitor \$2099

MacProducts USA carries a complete line
of Video from RasterOps, Radius, E-
Machines, SuperMac, NEC, and More!

MAGIC VIDEO SOLUTIONS

Magic 19 or 20" 24-bit card. Block mode
& accelerator compatible\$1299.....\$39

Magic 13" 8-bit color cd II.....\$269.....\$9

Magic 20" Trinitron.....\$2099.....\$63

Magic 19" or 20" 8-bit card\$499.....\$15

SCANNERS



Wide Selection of Scanners Available
SPECIAL MICROTEK PRICING!
MacProducts carries UMAX, Sharp,
Microtek, Abaton, Canon, and More!

To Order Call: 1-800-622-8721 or (512) 472-8881

Hours: M-F 8am-9pm Sat 10am-6pm

Cust. Service (512) 472-8881 ext 631

Tech. Support: (512) 472-8881 ext 628

24 hr Fax Line: (512) 499-0888

Intl. Orders: Call or fax Leasing: Yes! Flexible terms & quick
approval make it easy to lease. Tax: Texas Residents add 8%

Payment: Visa, Mastercard, Discover.

Your credit card is not charged until your

order is shipped! Wire transfers, approved company and institu-

tional PO's. (Net 15). \$5 charge for COD, cashiers checks.

Shipping: Airborne. \$10 min shipping charge.

All major carriers available.

Returns: Returns require RMA #. Please call (512) 472-8881.

Ext 625. All returns subject to a restocking fee. Shipping and
handling not refundable.

PRINTERS



TI microLaser Plus
NEW! 9ppm Engine
PS/17 \$1319
PS/35 \$1649

BUY LEASE

Apple StyleWriter\$439\$14

HP DeskWriter\$449\$14

QMS PS 410\$1799\$54

Microtek TrueLaser\$1399\$42

GCC Laser PrintersCall...Call

JetInc. Deskwriter/Stylewriter Refill ..\$11.

Seikosha SP2000 Dot Matrix...\$209\$61

We carry NEC, Abaton, Microtek, & More!

MAGIC ACCELERATORS BUY LEASE



Magic RailGun 030
"IIfx computing
power in a Plus"
-MacUser

RAM-disk, improved SCSI throughput.

Available math coprocessor. 1 yr warranty.

Available for the Plus, SE, & Classic.

MagicCache IIsi, SE/30.....\$259.....\$9

MagicCache IIfx\$169.....\$5

Magic RailGun030 16 MHz.....\$399.....\$12

Magic RailGun030 25 MHz.....\$599.....\$21

Magic RailGun030 33 MHz.....\$899.....\$30

RailGun SCSI Accelerator.....\$49\$2

16 MHz 68882 Coprocessor.....\$99\$3

MagicMath LC Coprocessor\$99.....\$3

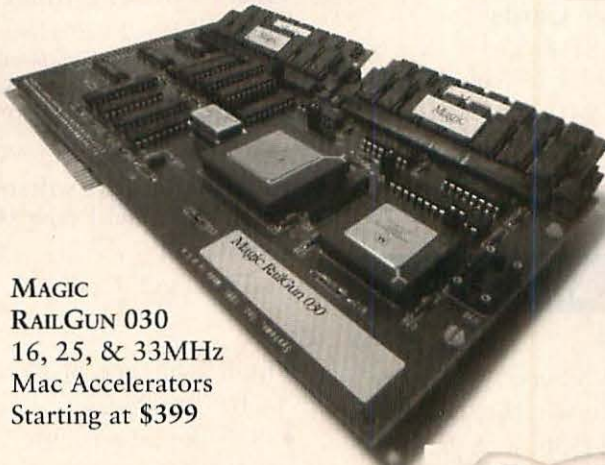


NEW! TokaMac 040
Accelerators starting
at only \$2099 for the
LC, SE/30, IIsi, & IIfx

ACCELERATORS/CACHE CARDS-ALL MODELS!

DayStar PowerCache IIfx 40MHz...\$1119.....\$34

Radius Rocket 040\$1899\$78



MAGIC
RAILGUN 030
16, 25, & 33MHz
Mac Accelerators
Starting at \$399

Opened software is not returnable. All Magic products (except
memory) carry a 30 day money back guarantee (call for details).
Terms: Item availability and price subject to change without
notice. Some products subject to back order.

Address: MacProducts USA
608 West 22nd Street
Austin, Texas 78705

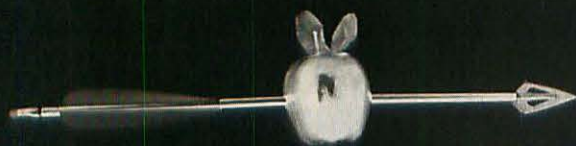
February 92



1-800-MAC-USA1

24 HR FAX 512-499-0888

Circle 175 on reader service card



YOU CAN'T



VISIONPRO COLOR MONITOR SYSTEMS

VisionPro graphic cards are manufactured under license for MacTel. Our SP and SPS cards support multiple monitors, block mode transfer & acceleration, pan/zoom 2x & 4x and virtual desktop. With our monitors, they are an outstanding color solution.

BusinessPRO Ikegami

- ◆ 8-bit ES card, 20" Triniton.....\$2497

SystemPRO Ikegami

- ◆ 8-bit SP card, 20" Triniton.....\$2797
- ◆ 24-bit SP card, 20" Triniton\$3349

SystemPRO Sony

- ◆ 8-bit SPS card, 19" Sony Triniton (GDM-1950).....\$3544
- ◆ 24-bit SPS card, 19" Sony Triniton (GDM-1950).....\$3997

Video Interface Cards

- ◆ 8-bit VisionST 813 (for Apple 13" or 14" color)\$275
- ◆ 24-bit VisionST 2413 (for Apple 13" or 14" color)\$375
- ◆ 24-bit Video XL w/acceleration (for Apple 19" or 21" color).....\$1475

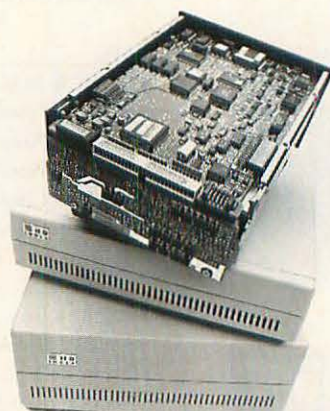
COLOR MONITORS

- ◆ Apple 13" RGB.....\$749
- ◆ Hitachi 14" MVX Super (Hi-res w/ tilt & swivel).....\$575
- ◆ Sony 20" GDM 1936.....\$2597

COLOR SCANNER

- ◆ VisionPro C600, 600 dpi w/ Adobe Photoshop (Ltd. Ed.).....\$1275

Aim with MacTel for your Apple solutions. MacTel Technology Corporation is a global corporation specializing in the design, manufacturing and distribution of a wide array of Macintosh peripherals. Our state-of-the-art surface-mount manufacturing facilities are located in Austin, Texas, which also hosts the hard drive assembly line, research laboratories and testing center.



STORAGE SOLUTIONS

Three of our drives have been rated 4 mice by MacUser Labs: the MacTel 45R drive (2/91), the Index 1.2 Gb drive (7/91) and the MacTel 2 GB DAT drive (10/91).

REMOVABLE - OPTICAL - TAPE

- ◆ Index 45R w/1 cartridge \$\$\$\$...\$479
- ◆ Index 88R w/1 cartridge\$699
Index 45R and 88R are bundled with Backmatic® and AutoSave®
- ◆ SyQuest cartridge SQ 400. \$\$\$\$...\$69
- ◆ SyQuest cartridge SQ 800.....\$119
- ◆ 2 GB DAT drive w/Retrospect software and 1 tape \$\$\$\$...\$1449
- ◆ 2 GB DAT Tape.....\$39
- ◆ 1.3 GB DAT Tape.....\$35

NEW

- ◆ 1 GB Tahiti optical drive w/1 cartridge.....\$3699
- ◆ 1 GB Optical cartridge.....\$249
- ◆ 650 mb Optical cartridge.....\$129

NEW

TELNET

phone net.....\$12.99

INDEX HARD DRIVES

The Index HD formatter is System 7 compatible and supports partitioning, password protection and is A/UX compatible. Our drives come preformatted with all necessary cable and brackets. Just plug the drive in and it's ready to go. Included free — 14 mb of public domain software.

Quantum drives Index 3.5"

	Internal	External
◆ 52 Mb, 12 ms, Slimline	\$249	\$299
◆ 105 Mb, 12 ms, Slimline	\$349	\$399
◆ 210 Mb, 12 ms.....	\$619	\$679
◆ 425 Mb, 12 ms.....	\$1349	\$1399

Imprimis drives Index 5.25"

◆ 320 Mb, 16ms	\$1149*	\$1199
◆ 330 Mb, 10.7 ms (Runner)	\$1299*	\$1399
◆ 640 Mb, 16 ms	\$1399*	\$1499
◆ 650 Mb, 10.7 ms (Runner)	\$1699*	\$1799
◆ 1.2 Gb, 16 ms \$\$\$\$	\$1999*	\$2099

*Mac II, IIx and Quadra 900 only

mactel
TECHNOLOGY CORPORATION

800•950•8411

AFFORD TO MISS.

INDEX MEMORY MODULES

GO FOR THE GOLD.

MacTel manufactures and tests our memory modules in-house to ensure the highest possible quality and reliability. All our SIMMs use **gold traces and contacts** for greater conductivity and durability. Our field test failure is *less than 1%*! In fact, we have so much confidence in our memory products that we back them with a lifetime warranty. If quality is important to you, don't settle for less than the best!

KEYBOARDS

MacTel's Index line of ADB extended keyboards have a 105-key layout, 15 function keys, cursor control keys and number pad. The French, German and Swiss keyboards come with system software.

Index extended keyboard

- ◆ English.....\$99
- ◆ French, German, Swiss (German & French).....\$119
- ◆ Spanish.....\$119



MACINTOSH CPUs AND SYSTEMS

- ◆ Mac IIx 3/40.....\$2497
- ◆ Mac IIci 5mb.....\$3297
- ◆ Mac LC, IIx, Classic II, Quadras, Powerbooks 100-140-170.....\$Call

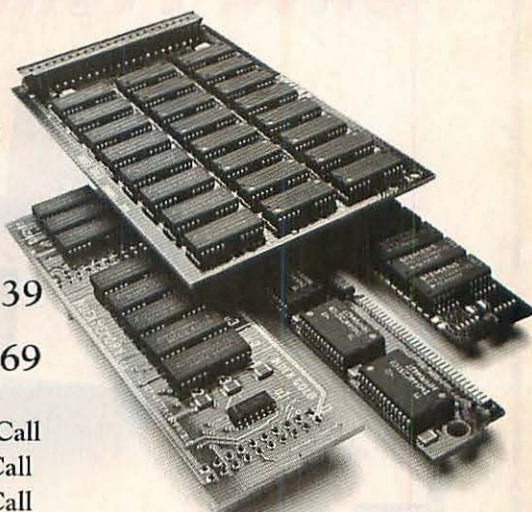
ORDERING:

No surcharge for Visa or MasterCard. European banking service available. University, government, military NET 30 and corporate (on approval) purchase orders accepted. Please allow 10 days for personal and company checks to clear. Returned merchandise must be authorized. To expedite processing, call 512/451-2600 for RMA number. Defective merchandise will be replaced or repaired at MacTel's discretion. Shipping and handling charges are not refundable. Product must be in original shipping container including all packing materials. All products are subject to a 5% restocking fee. All products subject to availability. All prices are subject to change. Technical support M-F 8:30 to 5:30 C.S.T..

- ◆ 1 Mb surface mounted/low profile, 70/80 ns.....\$37.95
- ◆ 1 Mb fx & LaserWriter II NTX SIMM, 70/80 ns.....\$38.95
- ◆ 1 Mb x 9 SIMM, 70/80 ns.....\$43
- ◆ 3 Mb Classic memory.....\$99
- ◆ Mac LC V-RAM upgrade.....\$65
- ◆ 4 Mb surface mounted SIMM, 80 ns, (IIx, IIci, IIx, IIci and LC).....\$139
- ◆ 1 Mb TI microLaser PS 17/35 & XL upgrade.....\$69

NEW

- ◆ Quadra V-RAM upgrade.....\$Call
- ◆ Powerbook 100-140-170 upgrades.....\$Call
- ◆ 8/16 mb SIMMs.....\$Call



ACCELERATOR BOARDS

Only Index Gold boards offer you the additional benefit of gold contacts & traces for greater durability, conductivity and reliability.

NEW

- ◆ Index Mac IIx 030 Direct Slot Interface.....\$99.00
- On-board 68882/20 MHz math co-processor with adaptor for Macintosh IIx. **Benchmark** software included.

NEW

- ◆ Index LC Mathmate.....\$69.00
- Accelerate math-intensive operations on your LC operations by up to 39% with a 68882/16 MHz math co-processor—and get a 15% overall CPU improvement. **Benchmark** software included.
- ◆ Index CachePro / Mac IIci.....\$119.00
- Increase the speed of your Mac IIci up to 33% with MacTel's new CachePro card.

NEW

- ◆ Index Classic II Mathmate.....\$99.00

C

contact the professionals at MacTel now for additional information. We handle only the best in Macintosh hardware, systems and peripherals, with names like Apple, RasterOps, Wacom, Sharp and our own top-quality VisionPro and Index brands. Call or fax for a free catalog.

3007 North Lamar, Austin, Tx 78705
512 / 451-2600 512 / 451-3323 FAX

To order from Europe, 512 / 451-2600
Swiss office: 042/36-44-33
Singapore office: 2550890

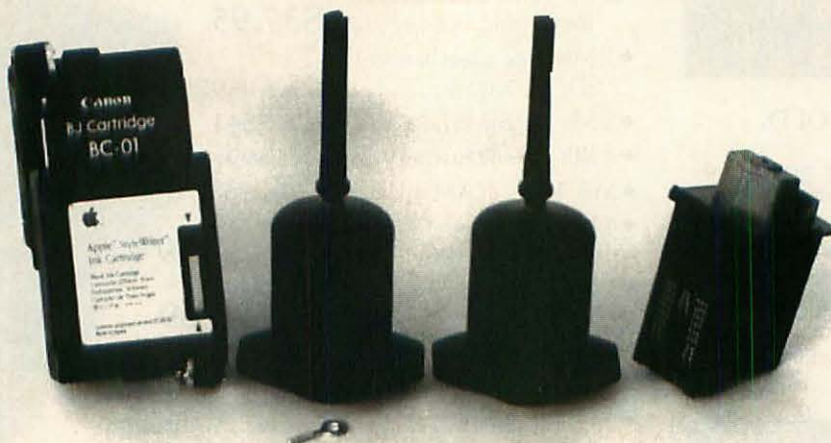
Index and VisionPro are registered trademarks of MacTel Technology.

mactel
TECHNOLOGY CORPORATION

800•950•8411

Circle 105 on reader service card

SAVE MONEY. SAVE THE PLANET.



It's always nice when you can do a little something for yourself and the planet you live on. And now, JetFill and MacSource are getting together to let most inkjet and bubblejet printer owners do just that. By using the JetFill ink cartridge refill system. You see, for about half of what you usually pay for a new printer cartridge, a single JetFill will fully refill your used cartridge with a scientifically formulated ink that produces rich, water-resistant images, in black, brown, blue, green, or red. And we also designed the injector to guarantee that the procedure is easy, clean, and safe. For over a year now, JetFill has been turning what was a messy, disposable nuisance into a clean, renewable resource.



Now here's the ecological bit: all JetFill products are composed entirely of recycled or recyclable materials. From box to injector. And, with JetFill refills, you can reuse the same printer cartridge up to five times. That's five less cartridges in our landfills. By the way, if you're really concerned about the alarming amount of

waste that is generated each year (we are!), save the empty injectors and cartridges and send them back to us. We promise that we'll reuse or recycle it all.



And finally, a bit of security. We know you'll like using JetFill refills. We're so sure of it, in fact, that we offer a money-back guarantee. If you're not satisfied with the JetFill ink cartridge refill, just send it back. We'll refund your money with no hassle. Simple as that.

JetFill Two-Pak
\$16.50

Economically sound. Ecologically responsible. Guaranteed. And right now, if you buy three JetFill two-paks, we'll give you an extra refill free.

So do a nice thing for yourself and the Earth. It's the only one we've got.

JetFill™



MacSource

HOURS:

M-F 8AM - 9PM CT

SAT. & SUN. NOON - 6PM CT



MacSource • 7801 North Lamar, Suite E-190 • Austin, Texas 78752 • (800) 285-2622

FAX: (512) 467-2642 • Technical Support: 1-800-723-2622 • International Quotes: (512) 467-9652

Visa & MasterCard Accepted with No Surcharge. Customers may deduct 1% for prepayment by Cashier's Check

IIsi with E-16
Call for Current Price

MacSource

OPEN
M-F: 8AM - 9PM
Sat & Sun: 12 - 6PM

E-MACHINES New Year Resolutions

Six New Products and Services from E-Machines and MacSource.

1. The **Futura SX** now supports up to 8bit 19 inches a 1024x 808 resolution. *Now only \$905.*
2. Introducing the **ColorPage T16 II**. Full and TwoPage resolution in one monitor. Sony Trinitron displays at 832x624 (72dpi) and 1024x768(87dpi). *Introductory Price \$1899.*
3. Introducing the **ColorLink EX/T**. Combination Ethernet/14" 24bit Color Card *\$695*
4. **ColorLink SX/T**. Combination Ethernet/16" 24bit Color Card/19" 8bit Card *\$1049.*
5. **QuickView Studio**. New Low Price! Video digitizer. QuickTime compatible *\$1395.*
6. **MoreCare™**. Additional one year warranty on E-Machines products *Call*

Macintosh IIsi Special

Macintosh IIsi, 5mb RAM, 105mb Hard Drive, 1.44mb Apple FDHD, Mouse, Standard Keyboard, 14" Color Monitor, 8 Bit Color.

Call For Lowest Price!

Mac Quadra System

Quadra 700, 8mb RAM, 425mb Quantum, 1.44mb Apple FDHD, Mouse, Apple Extended Keyboard, 16" ColorPage E16 Monitor, 832x624 resolution, 8 Bit Color.

Only ... \$7,187

Other Configurations Available

Mac IIsi System

Macintosh IIsi, 5mb RAM, 105mb HD, 1.44mb Apple FDHD, Mouse, Extended Keyboard, 14" Color Monitor, 8 Bit Color.

**For A Limited Time Only
Call For Lowest Price**

With 24 bit Color ...add \$499
Other Configurations Available

Classic 2/40 Special

Macintosh Classic, 4mb RAM, 40mb Hard Drive, 1.44mb Apple FDHD, Mouse.

Only ... \$1,209

New Power Books

PowerBook 100 \$2,099
PowerBook 140,2/40 \$2,899
PowerBook 140,4/40 call
PowerBook 170, 4/40 call

Macintosh Classic II

The Macintosh Classic II sports a Motorola 68030 processor at 16mhz and is available in many configurations. Supply is limited so call for availability and a great price!

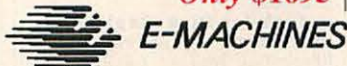
America's Fastest Growing E-Machines Dealer!



ColorPage T-16 Quadra Compatible!

E-Machines ColorPage T16 16-inch display. Works with the Macintosh Quadra Built in video! Displays 832x624 resolution at 72dpi. The T-16 Judged Best 3 years running by MacUser Magazine.

Only \$1695



E-MACHINES

Color Displays

ColorPage T16 II \$1899
ColorPage E16 \$1095
E-Machines TX16 \$1750
E-Machines T19 \$2625

Color Interface Cards

Futura EX CALL
24-bit Accelerated NuBus interface card for the Apple 12 and 13-inch displays, ColorPage E16, and Mac compatible displays with 640 x 480 resolutions. On board acceleration, virtual screens, and pan and zoom.
Double Color Board for the T16 \$350
Futura SX/8 \$695
Futura SX \$905
Futura MX \$1395
ColorLink EX/T \$695
ColorLink SX/T \$1049
E-Machines TXsi and T19/si \$900
E-Machines TXSE30/8 \$900

Options

Futura SX/8 to Futura SX Upgrade \$210
Futura EX to Futura SX Upgrade .. \$350

**Have a Lower Price
on E-Machines Monitors?**

**Call Us and See
What We Can Do!**

Authorized Dealer



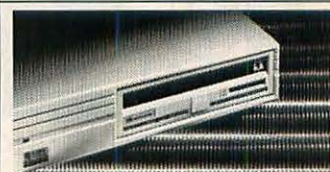
SOLECTEK

Solectek Pocket FAX Modem

Includes Cable, Software and reliability. Friendly user interface makes it the easiest FAX modem to use and the price makes it the most affordable.

only \$215
ZOOM 2400 Modem \$65
Cable for ZOOM \$15

Other Modems Available. Call for Information.



Rodime Hard Drives

Cobra 100mb External \$699
Cobra 210mb External \$969
Cobra 330mb External \$1695
Cobra 650mb External \$2365
88R & 45R Removables ... \$839/559

Solutions by Radius



Radius PowerView \$519
Precision Color Display/20 ... \$2998
Color Display 19" \$2998
Color Display 21" \$3169
Radius Rocket \$1819
Color Pivot \$1399
Pivot Display \$769
Full Page Display (portrait) \$629

Applied Engineering

1.44mb FDHD External floppy drive **On Sale \$215**



AE QuickSilver w/FPU \$279
QuickSilver w/out FPU \$219
800K External Floppy Drive \$189
QuadraLink \$189
Cache-In CI Cache Card \$189
Shadow Network Software \$69



Laser Printers

**TI Authorized Dealer
(Not Actual Size)**

New! 9 PPM MicroLaser Plus!

MicroLaser Plus PS/17 \$1339
NEC SilentWriter II m90 \$1499
PS35, & Turbo Printers **Call**
QMS 410 Laser Printer **\$1725**
Apple StyleWriter \$435
Seiko Color Printer **Call**
HyperNet Connectors \$25
HyperNet 10 Pack \$150

(PhoneNet™ Compatible Connector)

1-800-285-2622
ALL TOLL FREE

MacSource™ • 7801 North Lamar, Suite E-190 • Austin, Texas 78752 • (800) 285-2622

FAX: (512) 467-2642 • Technical Support: 1-800-723-2622 • International Quotes: (512) 467-9652

Visa & MasterCard Accepted with No Surcharge. Customers may deduct 1% for prepayment by Cashier's Check

Prices Subject to Change without Notice.



Quantum 170^{mb} \$499*



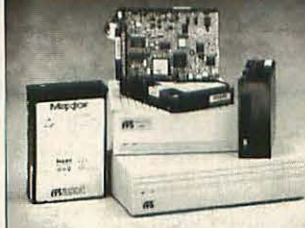
MB	INTL	EXTL
52	\$229	\$299
105	339	429
170	499	589
210	629	699
425	1299	1399

*While supplies last

WREN 1.2^{Gb} \$2099

300	\$1199	\$1349
300	1199	1299
330	1349	1499
600	1499	1649
630	1549	1649
630	1849	1949
1.2G	2099	2199

Maxtor 213^{mb} \$579*



MB	INTL	EXTL
120	\$359	\$439
213	579	679
535	1599	1749
760	1649	1799
1.2G	2299	2499

Toshiba CD ROM \$579



3301 \$579

Limited offer includes free
"Nautilus" & "Showcase" CD

1.3 GB DAT Tape \$1349

TEAC 155	\$599
WangDAT 1349	
WangDAT 1999	
Python 1499	

2 Page Monitor \$799



Sampo 20" mono w/card \$799

• **30-Day Money-Back Guarantee** • All Drive products carry a 30-day money-back guarantee. Your risk in the transaction is the cost of shipping.
• **Disk-for-Disk Replacement Warranty** • Quantum, Maxtor (excluding Panther 1.2G), Syquest and ARDAT Drives carry a two-year "parts & labor" disk-for-disk replacement warranty. WREN, Teac, WangDAT, Conner drives and Syquest Cartridges carry a one-year "parts & labor" disk-for-disk replacement warranty.
• Prices and Specifications subject to change without notice.

SyQuest 88^{mb} \$699

SQ-555 44mb	\$479
SQ-5110 88mb	699
SQ-555 Dual	899
SQ-5110 Dual	1599

Sonic Systems EtherNET

TwP/TnT	\$199
Magic Bus	279
7-Port Hub	499
NetPack	

Includes six cards
QuickMail™ by CE 1199

NetPack/HUB

Includes six cards,
QuickMail & Hub 1599

• **Toll-Free Technical Support** • Toll-Free Technical Support. 9:30am to 7pm Monday thru Friday, Central Time. As often or for as long as you need.
• **Brackets and Cables Included** • All Hard Drives include brackets, cables, cords and LED's required for operation in the specified Macintosh. All Hard Drives come pre-formatted with Apple's latest stable all-platform System software, 18.8 MB of Publicly Distributable software from the B'MUG Library, and the "ALLIANCE POWER TOOLS" SCSI formatter/hard partitioner.

AMEX ACCEPTED

GOV., UNIV., PO's, NO SURCHARGE



VISA/MC, DISCOVER NO SURCHARGE

ACCEPTED CORP. PO's, NO SURCHARGE

Toll Free U.S. & Canada

1-800 235-2752

M-F 8:30AM-9PM CT, SAT 10AM-4PM CT
TOLL FREE UK: 0800-897-545, TOLL FREE AUSTRALIA: 0014-800-125-875
INTERNATIONAL: 1-816 478-8300 FAX: 1-816 478-4596 (24 HRS)

ALLIANCE PERIPHERAL SYSTEMS, 2900 S. 291 HWY, LOWER H. INDEPENDENCE MO 64057



Circle 15 on reader service card

Mac and MORE

Your Mail Order SuperStore™

Mon - Thur 9:00 - 9:00 Friday 9:00 - 6:00 Saturday 10:00 - 6:00 Eastern and Mountain

CPUs and More...

Free 1200 Baud Hayes Modem!
Buy any Apple system and a monitor from Mac and More and we'll give you a modem. But supplies are limited so place your order while they are still in stock!!!

Macintosh Classic	\$845.00
Macintosh Classic 2/40	\$1199.00
Macintosh LC 2/40	\$189.00
Macintosh IIsi 3/40	CALL FOR NEW LOW PRICES!
Macintosh IIfx 5/0	\$3899.00
Macintosh IIfx 4/0	\$189.00
Mac IIsi NuBus or 030 Direct Card	\$160.00
Apple Extended Keyboard	\$90.00
Apple Standard Keyboard	\$124.00
MacPro Plus Extended Keyboard	

The New Macs are here!!!

Macintosh Classic II	CALL
Macintosh PowerBook 100, 140, & 170	CALL
Macintosh Quadra 700, and 900	CALL

...and we have PowerBook memory upgrades as well as Quadra VRAM

Systems and More...

Mac LC Student Package
4 Mb of RAM, 40 Mb internal hard disk, mouse, microphone, keyboard, Apple II 13" RGB monitor and StyleWriter printer.
Add \$470.00 and you can buy this package with a Personal LaserWriter LS.

\$2499

Mac IIsi Starter Package
3 Mb of RAM, 40 Mb internal hard disk, Apple standard keyboard, mouse and an Apple 13" RGB color monitor.

\$2899

Mac IIsi Office Package
5 Mb of RAM, 120 Mb internal hard disk, mouse, microphone, Apple standard keyboard, Apple 13" RGB monitor, and Personal LaserWriter LS.

\$4299

Mac IIfx Designer Package
8 Mb of RAM, 170 Mb internal hard disk, mouse, Apple extended keyboard, Radius Color Pivot with built-in video, and Apple Personal LaserWriter NT.

\$6779

We do custom configurations!

Extended Warranty Service for your Macintosh

The fastest-growing direct reseller of Macintosh systems. Club 24 Services include:

- 24 month warranty on Apple products
- 72 hour repair or replace turn around
- Shipping via FedEx included both ways

Want more details? Call!

Terms and Conditions: Payment. Mac and MORE accepts Visa, MasterCard, C.O.D.s, and Purchase Orders. C.O.D.s are shipped Cash/Check/Check-up to \$10,000. Corporate and School Purchase Orders are Non-15 for orders over \$2500 only, and are subject to credit approval. Warranties. All warranties on Macintosh or Apple brand products sold by Mac and More will be honored by Mac and More or its authorized agents only. Live all other Macintosh resellers. Mac and More is not an authorized Apple reseller. All other manufacturers warranties are honored by Mac and More and the original manufacturer. Returns. All orders returned or refused will be charged a minimum 15% restocking fee. Call for a RIG before returning. Returns must be in original packaging with software seals unbroken. Shipping. For orders over \$1000 we ship to destinations in the continental US at no charge. Some large items may not be included in this offer. Ask for details when ordering. Terms, Conditions, and Prices are subject to change without notice or obligation. All products sold by Mac and More are new. We do not sell used equipment. © 1991 Mac and MORE, Inc. All rights reserved. 912111

West Coast & Canada Sales Office

4730 Walnut, Suite 105
Boulder, Colorado 80301

800-846-4MAC West Coast and Canada

303-447-2732 International
303-447-3973 Corp. Fax
303-447-8051 Fax

East Coast Sales & Corporate Office

5426 Beaumont Center Blvd., Suite 300
Tampa, Florida 33634

800-945-1MAC East Coast

813-886-9534 International
813-888-9535 Corp. Fax
813-881-0634 Fax
800-945-TECH Tech Support

Video and More...

Apple 12" Monochrome Monitor	\$229.00
Apple 12" RGB Monitor	\$429.00
Apple 13" RGB Monitor	\$669.00
Apple 15" Portrait Monitor	\$769.00
Apple Two Page Monitor	\$1199.00
Apple 21" Color Monitor	NEW
Seiko 14" Trinitron RGB	\$629.00
Sony 14" Trinitron RGB	\$649.00
Macintosh Display Card 8+24	\$545.00
Macintosh Display Card 8+24 GC	\$1349.00
512K VRAM Upgrade for Mac LC	\$99.00

High-end Video and More...

E-MACHINES
We now carry E-MACHINES Call for the most competitive prices around!

RasterOps

21" Hitachi Color System with RasterOps 24XLi	\$5099.00
---	-----------

19" Color Trinitron Signature System with RasterOps 8XLi	\$3729.00
--	-----------

19" Hitachi Color Systems with RasterOps 8XLi	\$2789.00
with RasterOps 8XL	\$2329.00

Mac LC and Classic Systems

RasterOps 8LC 19" Hitachi System	\$2399.00
ClearVue/LC 19" Monochrome System	\$1199.00
ClearVue/Classic 19" Mono System	\$1199.00

Mac Display Boards

RasterOps 24XLi Display Board	\$2299.00
RasterOps 8XLi Display Board	\$959.00
RasterOps 8XL Display Board	\$449.00
RasterOps 24si Display Board	\$579.00
ClearVue/GSXL Gray Scale Board	\$639.00

Multimedia Boards

RasterOps 24XLTV Board	\$2559.00
RasterOps 24STV Board	\$1169.00
CorrectColor Calibrator	\$1899.00
Expresso Slide Scanner	\$669.00

Radius

Pivot Displays

Color Pivot Display with soft pivot	\$1329.00
Color Pivot 8-bit System	\$1840.00
Pivot Display with soft pivot for SE/30, LC, II, IIsi	\$755.00
Pivot 8-bit System	\$1012.00
for SE/30, LC, and NuBus	

Full Page Displays

Full Page Display for Classic	\$824.00
Full Page Display for LC	\$886.00
Full Page Display for IIsi and IIfx	\$629.00

Color Systems

Radius PowerView SCSI Interface	\$493.00
PrecisionColor 8 & 8si Interface Card	\$511.00
PrecisionColor 8x & 8xsi Interface Card	\$734.00
PrecisionColor 24x & 24xsi Int. Card	\$1624.00
Radius Color Display 20" (Multiscan)	\$2749.00
Radius Color Display 19" (Trinitron)	\$2749.00

Best Sellers and More...

Apple 7.0 Personal Upgrade Kit	\$99.00
Abaton InterFax 24/96	\$279.00
Adobe Type Manager 2.0	\$59.00
Adobe Illustrator 3.0	\$379.00
Adobe Photoshop	\$599.00
Aldus PageMaker 4.0	\$499.00
Aldus Freehand 3.0	\$399.00
Clarix MacDraw Pro	\$285.00
Clarix MacWrite II	\$139.00
Clarix FileMaker Pro	\$215.00
DoveFax Plus Modem	\$349.00
Kensington Turbo Mouse ADB	\$109.00
Microsoft Word 4.0	\$245.00
Microsoft Excel 3.0	\$309.00
Prometheus ProModem 9600MPlus	\$599.00
Quark Xpress 3.1	\$569.00

Printers and More...

QuickDraw

Apple ImageWriter II	\$429.00
HP DeskWriter w/ AppleTalk	\$429.00
HP DeskWriter C w/ AppleTalk	\$749.00
GCC PLP II & IIS	Call

TrueType

Apple StyleWriter	\$429.00
Apple Personal LaserWriter LS	\$399
Special Low Price—for a limited time!	
Microtek TrueLaser	\$1795.00

PostScript

NEW! Apple LaserWriter IIf	Call
NEW! Apple LaserWriter IIfg	Call
Has Ethernet connection built-in	
Apple Personal LaserWriter NT	\$1799.00
Epson EPL-7500 with RISC processor	\$1949.00
GCC BLP Elite	Call
TI MicroLaser PS17 w/AppleTalk	\$1299.00
TI MicroLaser PS35 w/AppleTalk	\$1599.00
NEC SilentWriter 2 Model 90	\$1649.00
QMS PS-410	\$1749.00
QMS PS-815MR	\$4199.00

Networks and More...

Phone network adapters	\$19.00
Asanté FreindlyNet Media Adapters	\$89.00
Asanté FriendlyNet Cards	\$249.00
Asanté MacCon+ 16K Cards	\$199.00
Asanté MacCon+ 64K Cards	\$259.00
Asanté 10T Hub	\$679.00

Accelerators and More...

DayStar FastCache IIfx	\$269.00
DayStar FastCache IIsi	\$289.00
DayStar 33 MHz PowerCache LC	\$669.00
Get virtual memory on your LC with System 7	
DayStar 40 MHz PowerCache	\$869.00
DayStar 50 MHz PowerCache	\$1335.00
Available for the LC, SE/30, II, IIfx, IIsi & IIfx	
Radius Rocket 040 Accelerator	\$1629.00

Scanners and More...

NEW Apple One Scanner	CALL
Caere Typist Hand Held OCR	\$479.00
Epson ES-300C Color Scanner	\$1449.00
Includes interface and software	
Microtek 600ZS Color Scanner	\$1449.00

800-945-TECH Tech Support

We now have a new toll-free line for handling your technical calls faster and more efficiently. And, we'll continue to find ways to make buying from Mac and More a smart decision.



Drives and More...

Internal

ETC 40 Mb Quantum LPS, 12 msec	\$199.00
ETC 52 Mb Quantum LPS, 12 msec	\$229.00
ETC 105 Mb Quantum LPS, 12 msec	\$339.00
ETC 120 Mb Maxtor Cheyenne, 15 msec	\$359.00
ETC 170 Mb Quantum PRO, 9 msec	\$559.00
ETC 210Mb Quantum PRO, 9 msec	\$629.00
ETC 213 Mb Maxtor LXT, 15 msec	\$599.00
ETC 340 Mb Maxtor LXT, 13 msec	\$999.00
ETC 425 Mb Quantum PRO, 9 msec	\$1199.00
ETC 535 Mb Maxtor LXT, 13 msec	\$1699.00

The drives below can be used in the Mac II, IIfx, and IIfx.

ETC 307 Mb WREN-4, 14 msec	\$1129.00
ETC 337 Mb WREN-Runner-1, 10.7 ms	\$1279.00
ETC 613 Mb WREN-5, 16.5 msec	\$1349.00
ETC 676 Mb WREN-6, 15.5 msec	\$1399.00
ETC 676 Mb WREN-Runner-2, 12 ms	\$1699.00
ETC 1.05 Gb WREN-7, 15 msec	\$1949.00
ETC 1.2 Gb Maxtor Panther, 13 msec	\$2099.00

External

ETC 40 Mb Quantum LPS, 12 msec	\$259.00
ETC 52 Mb Quantum LPS, 12 msec	\$299.00
ETC 105 Mb Quantum LPS, 12 msec	\$419.00
ETC 120 Mb Maxtor Cheyenne, 15 msec	\$439.00
ETC 170 Mb Quantum PRO, 9 msec	\$639.00
ETC 210Mb Quantum PRO, 9 msec	\$699.00
ETC 213 Mb Maxtor LXT, 15 msec	\$679.00
ETC 340 Mb Maxtor LXT, 13 msec	\$1079.00
ETC 425Mb Quantum PRO, 9 msec	\$1279.00
ETC 535 Mb Maxtor LXT, 13 msec	\$1779.00
ETC 307 Mb WREN-4, 14 msec	\$1279.00
ETC 337 Mb WREN-Runner-1, 10.7 ms	\$1429.00
ETC 613 Mb WREN-5, 16.5 msec	\$1499.00
ETC 676 Mb WREN-6, 15.5 msec	\$1549.00
ETC 676 Mb WREN-Runner-2, 12 ms	\$1849.00
ETC 1.05 Gb WREN-7, 15 msec	\$2099.00
ETC 1.2 Gb Maxtor Panther, 13 msec	\$2249.00

Removables and More...

ETC 45R SyQuest Removable Low price includes one cartridge.	\$429
ETC 88R SyQuest Removable New low price includes one cartridge.	\$599
ETC 45DR Dual SyQuest Two removable drives in one box. Includes one cartridge! The ETC 88DR Dual SyQuest Drive is also available for \$1299.00	\$799

45 Mb Syquest Removable Cartridge	\$63.00
88 Mb Syquest Removable Cartridge	\$129.00

MACWORLD EXPOSITION

See us at booth No. 5820 in Brooks Hall

Bottom Line

In Stock.

D I S T R

Macintosh™



Apple Macintosh Classic 1/0 with keyboard.....	\$825
Apple Macintosh LC 2/40.....	\$1550
Apple Macintosh IIsi 3/40.....	\$1999
Apple Macintosh IIsi 5/0.....	\$2725
Apple Macintosh IIfx.....	\$3745
Apple Macintosh Classic II 2/40.....	\$1541
Apple Macintosh Quadra 700.....	\$4237
Apple Macintosh Quadra 900.....	\$4757
Apple Macintosh PowerBook 100 2/20.....	\$2029
Apple Macintosh PowerBook 140 4/40.....	\$2841
Apple Macintosh PowerBook 170.....	\$3734

AE Applied Engineering



AE SuperDrive 1.44.....	\$209
AECache-In IIsi Cache Card.....	\$195
AE QuickSilver IIsi Cache Card.....	\$225
AE QuickSilver IIsi Cache Card with 68882.....	\$259
AE TransWarp LC 33MHz Accelerator.....	\$699
AE TransWarp LC 33MHz Accelerator w/68882.....	\$879

NEW! Applied Engineering Plus Drive. \$283

Full SuperDrive capability for the Mac Plus, SE, and Mac II.
MS-DOS compatible. Auto & Touch Eject. One Year Warranty.

E-Machines



E-Machines Professional Video Solutions	
E-Machines ColorPage E-16.....	\$1140
E-Machines ColorPage T-16.....	\$1669
E-Machines T-19.....	\$2809
E-Machines TX.....	\$1669
E-Machines Futura EX.....	\$662
E-Machines Futura SX.....	\$997
E-Machines Futura SX/8.....	\$662
E-Machines Futura MX.....	\$1332
E-Machines Double Color.....	\$326
E-Machines Double Color LC.....	\$394

DRIVES & TAPES

Applied Engineering 1.44 Drive	209
Bernoulli 90MB w/ Interface	814
Bernoulli 90MB TriPak	404
MicroNet 88mb Removable	949
Syquest 88MB Cartridge	119
PLI 2GB DAT Drive	2044
PLI Infinity 40 Removable	575
PLI Infinity 88 Removable	849
PLI Quick SCSI with Cable	310
PLI Super Floppy	399
PLI Turbo Floppy	273
PLI Quick SCSI with Cable	310
Quantum 52MB LPS	239
Quantum 105MB LPS	349
Quantum ProDrive 170MB	629
Quantum ProDrive 210MB	659
Quantum 425MB	1275
Internal/External Drive Kit	29.99
Syquest 44MB Cartridge	63
Syquest 88MB Cartridge	119

CD ROM

Chinon CD-ROM	525
NEC CDR-36	433
NEC CDR-36 w/ Type Gallery	469
NEC CDR-73	616
PLI CD ROM	725
Toshiba CD-ROM XM 3201A	685
Wayzata Clipart Masterpieces	105
Wayzata Down To Earth	175

Mac Academy

Macintosh Video Training Tapes.
The easy way to learn all the best
Macintosh Software Application.
Prices Starting at \$39



Wayzata Publique Art 1.03	126
Wayzata Quickart v.2.02	210
Wayzata Photobank Vol. 1	130
Wayzata About Cows v.3.09	98
Wayzata CIA World Factbook v.3.09	91
Wayzata US Presidents v.3.09	30
Wayzata CD Funhouse	46
Wayzata BBS in a box	84
Wayzata EPS Professional v.1.0	190
Voyager CD Audiostack	65
Voyager Videostack	65
Grolier's Encyclopedia w/ Pictures	205
Microsoft Office - CD ROM	574
Type Gallery PS	229
NEC Clip Art 3-D	221

Wayzata BBS in a box	84
Wayzata EPS Professional v.1.0	190
Voyager CD Audiostack	65
Voyager Videostack	65
Grolier's Encyclopedia w/ Pictures	205
Microsoft Office - CD ROM	574
Type Gallery PS	229
NEC Clip Art 3-D	221

SOFTWARE

3 in Three	24
4th Dimension 2.2	469
Adobe Illustrator 3.2 w/ATM	335
Adobe PhotoShop 2.0	515
Adobe StreamLine 2.0	75

Adobe Type Manager 2.0.2	54
Adobe Type Reunion	36
After Dark 2.0	22
Aldus Design Team	799
Aldus Freehand 3.0	369
Aldus PageMaker 4.01	475
Aldus Superhand 3.0	129
Aldus Gallery Effects	129
Aldus Persuasion 2.0	299

Wacom Tablets

6x9" Standard Surface.....	\$495
12x12" Standard Surface.....	\$695
12x12" Electrostat Surface.....	\$759
12x18" Standard Surface.....	\$1025
12x18" Electrostat Surface.....	\$1099
18x25" Standard Surface.....	\$2725



Animation Works	109
Aqua Blooper Piper	28
At Once!	273
Canvas 3.0	239
Carbon Copy 2 Pack	153
Carmen Sandiego - World	27
Carmen Sandiego - USA	27
Carmen Sandiego - Europe	27
Carmen Sandiego - Time	27
Claris Works	184
Darwin's Dilemma	24
DiskFit 2.0	57
Disk Doubler 3.7	39
Disk Top 4.0	62
Double Helix 3.0	325
Farallon Media Tracks	171
Faces-tris III	25
Falcon 2.2	32
Far Side Calendar	46
Fastback 2.1	97
FileMaker Pro	181

BOTTOM LINE INTERNATIONAL DEPARTMENT

Bottom Line Distribution is committed to the needs of the international Macintosh user and reseller. Fast and reliable customer service is standard. Contact our full-time international department via fax at (512) 476-6399. We ship DHL, UPS

International, or Federal Express. We stock 220v versions of most hardware and 220v converters are available. Dealer inquiries are welcome. Language interpreters are available. Internationale Händlerkonditionen.

INTERNATIONAL SALES FAX (512) 476-6399

Bottom Line Distribution 1800 Rio Grande, Austin, Texas 78701

Turn back for the rest of the Bottom Line.

BUT

CLARIS



PLI



GCC TECHNOLOGIE



Clariss Software

Clariss Works—Includes Drawing, Word Processing, Spreadsheet, Database, & Communications.....\$184

Clariss FileMaker Pro.....\$181

Clariss MacWrite II with Correct Grammar.....\$125

Clariss MacDraw Pro.....\$249

Clariss Resolve Spreadsheet.....\$249

Clariss MacProject.....\$329

Clariss Hypercard.....\$124

Clariss CAD.....\$542

PLI Infinity 45MB SyQuest Removable.....\$575

PLI Infinity 88MB SyQuest Removable.....\$849

PLI Infinity 3.5" 128MB Sony Optical.....\$1610

PLI Infinity 5.25" 600MB Sony Optical.....\$2832

NEW! PLI Infinity 3.5" 21MB Floptical.....\$515

PLI Infinity 3.5" 21MB Floptical Cartridge.....\$27

PLI Sony CD-ROM Drive.....\$636

PLI Infinity 2.0GB DAT with Retrospect.....\$1824

PLI 1.44 Turbo Floppy.....\$287

PLI Quick SCSI with Cable.....\$310

PLI Twin Infinity 45MB SYQuest Removable.....\$1199

GCC Laser Printers

GCC PLP II (4ppm).....\$849

GCC PLP IIs (8ppm).....\$1246

GCC BLP Elite (4ppm, 17 Fonts).....\$1415

GCC BLP Elite8 (8ppm, 17 Fonts).....\$1810

GCC BLP II (4ppm).....\$1659

GCC BLP IIs (8ppm).....\$2409

GCC Write Impact (24pin Dot Matrix).....\$499

Get Adobe Type Manager for \$25 with GCC Purchase!

SOFTWARE CONT'D

FilmMaker.....399

Fontographer 3.3.....225

FontMonger.....65

Fontbase +Mac.....265

FrameMaker.....642

Freedom of the Press 3.0.....229

Glider 4.0.....28

Harpoon.....38

Kid Pix 1.2.....33

Lotus 1-2-3 for Macintosh.....299

Lucasfilm Loom.....32

MacDraw Pro.....249

MacGlobe.....39

MacProject II.....345

Magic.....229

Macromind Director 3.0.....618

Macromind Accelerator.....125

Macromind MediaMaker.....449

MacLink Plus/PC.....115

MacLink Plus/Trans.....97

MacRecorder.....169

MacWrite Pro.....NEW

Managing Your Money 4.0.....124

Mariah.....79

MasterTracks Pro.....183

MicroPhone II 4.0.....195

Microsoft Flight Simulator.....42

MS Excel 3.0.....299

MS Word 4.0.....225

MS Office.....489

MacroMind/Paracomp

MacroMind Director.....\$618

MacroMind MediaMaker.....\$449

MacroMind Accelerator.....\$125

Magic.....\$229

ModelShop II.....\$529

RenderMan.....\$559

Swivel 3D Pro.....\$399

FilmMaker.....\$399



MS Project.....429

MS Works.....179

MiniCAD 3.0.....469

ModelShop II.....529

More 3.0.....249

More After Dark.....21

More After Dark/After Dark Bundle.....37

Mutant Beach.....33

Norton Utilities Mac 1.1.....74

Omnis 5 Single User.....566

OmniPage 3.0.....459

Passport Encore.....335

Passport Midi Interface.....63

Patton Strikes Back.....33

PixelPaint Professional 2.0.....479

PGA Golf.....34

Renderman.....559

Quark XPress 3.1.....511

Quick Keys II V.2.1.....87

Quicken 3.0.....38

Retrospect.....131

Sim City.....27

Sim City Supreme.....44

Sim Earth.....38

Sim Ant.....32

Soft PC 2.5.....178

Soft AT.....279

Soft PC 2.5 Classic/LC.....117

Stratavision 3D 2.0.....579

Studio/32.....399

TI Accessories

1MB TI RAM Upgrade.....\$59

Replacement Toner.....\$55

Letter/ Legal Tray.....\$55

Envelope Feeder.....\$244

Paper Feeder Drawer.....\$244

Stuffit Deluxe 3.....48

SUM II.....87

SAM 3.0.....58

Swamp Gas.....24

Swivel 3D Pro.....399

System 7.0.....85

Tesseract.....25

Tetris.....23

Think C.....153

Think Pascal 3.0.....159

TOPS 3.1 Network Bundle.....172

Typesetter 2.0.....122

Ultra Paint.....115

Vellum 2.0.....1399

Vette.....32

Virex.....46

Wealth Builder.....129

White Knight.....75

WordPerfect 2.03.....265

Write Now 2.0.....111

Wetris.....23

HOW TO ORDER Payment: Visa, Mastercard, Discover (no surcharge), checks, and COD's. \$6,000 maximum on COD's. Tax: Texas residents add 8% sales tax. Prices and items subject to change and availability. International: 5% surcharge on international orders. Mail In: Orders accepted with a \$10 surcharge. Terms: You are not charged until your order is shipped. Phone charges cannot be refunded. Shipping: minimum \$5-UPS Ground, Blue, Red, Federal Express. Returns must be in original condition and package and require an RMA#. Seal must not be opened on software. Returns may be subject to a restocking fee. Ask for details when ordering. Bottom Line Distribution cannot be responsible for errors in typography or photography.



BOTTOM LINE

DISTRIBUTION

Fax: 1-900-420-8770
1800 Rio Grande, Austin, Texas 78701

\$10 PER FAX

1-900-420-3636

\$2 PER MIN

WHO FANCED HIMSELF AS A CORPORATE CLIMBER, PUT ON HIS BOOTS AND STARTED THE SYQUEST TO THE TOP. ONCE THERE, HE PULLED OUT A STRING (YOU MIGHT SAY HE WAS HIGH STRING), WRAPPED IT AROUND THE TOP AND PUT A SPIN ON IT.

SIGHED, "WHILEY, WHAT A HEAVY THOUGHT!" SAM'S A MAN ABLE TO CARRY THE WEIGHT OF HIS OWN MIND. HE HAD BEEN PONDERING THE EFFECTS OF MOUNTING BRACKETS ON MAN IN THE MOON.

TODAY WAS A DAY UNLIKE ANY OTHER DAY. WHOLESALE SAM JUST GOT A BIG PROMOTION AND WAS ON HIS WAY. SUDDENLY HE TOOK TWO STEPS BACK AND

WHOLESALE HARD DRIVES

Quantum

		internal	external
52LPS	9ms	\$209	\$269
105LPS	9ms	\$329	\$379
210PRO	10ms	\$615	\$675

PRO series drives are 3.5" half-height.
LPS series drives are 3.5" Low Profile.

"WHOLESALE SAM"

Maxtor

		internal	external
80Mb	17ms	\$269	\$329
125Mb	15ms	\$349	\$429
210Mb	15ms	\$589	\$649
340Mb	14ms	\$939	\$999

CONNER

		internal	external
200Mb	16ms	\$599	\$655

MICROPOLIS

		external
320Mb	14ms	\$1099
660Mb	16ms	\$1499
1000Mb	14ms	\$2099
1354Mb	14ms	\$2699



EXTERNAL: Zero-footprint solid metal case, dual SCSI ports for daisy-chaining, external LED, SCSI cable, power cable, ONTRACK formatting/partitioning software.
INTERNAL: Mounting brackets, SCSI cable, ONTRACK formatting/partitioning software.

Mailing Address: 2415 S. Roosevelt, Tempe, Arizona 85282. Local (602) 350-1171. FAX (602) 350-1191. Policy: Prices, terms & availability subject to change without notice. All products are NEW. All products carry a manufacturer's warranty. No returns on opened software. TERMS: No surcharge for MasterCard/VISA. SHIPPING: UPS or FedEx only. APO/FFPO orders accepted. DOA equipment immediately replaced upon return. Product must be undamaged and in original packaging and condition. Personal checks will delay shipping 10 days. 2/92



Seagate

		internal	external
60Mb	28ms		\$219
80Mb	20ms	\$259	\$315
337Mb	11ms		\$1199
676Mb	15ms		\$1579
1 Gig	12.9ms		\$1999

Internal drives fit the Mac II, IIfx, and IIfx.

SyQuest

44Mb Removable Drive with Cartridge	\$419
Additional cartridges	\$66

88Mb Removable Drive with Cartridge	\$595
Additional cartridges	\$115

Memory

1Mb	(1x8-80ns)	\$36
4Mb	(4x8-80ns)	\$149

We'll beat any advertised price. Call for information.



800-755-3952

TOLL-FREE IN U.S. AND CANADA

WHOLESALE

one of the oldest names in the storage business.

LOWEST PRICES AVAILABLE!
ALL NEW EQUIPMENT!

B+C

MARIGOLDS, AND IN HIS 9 MILLISECONDS OF DISTRACTION, SAM HAD TAKEN A DRIVE RIGHT PAST THE SEAGATE EXIT. THE ONLY WAY BACK WAS UP. SAM

Billboard Advertisers Index

MacOutlet Peripherals 00.622.6885	384
oftshoppe Public Domain Software 00.829.BEST	384
eviathan Entertainment 00.252.5029	384
am Software Networking 03.630.0055	385
Computation Networking 14.238.2120	385
Bible Research Religion 00.423.1228	385
Microspot Utilities 00.622.7568	385

Catalog Product Index

Hardware

Bar Code	386
CD-ROM	386
Computer Systems	386
Disk Drives	389
Memory Upgrade	389
Peripherals	392
Power Protection	394
Printers	394

Software

Astrology	395
Bar Code	395
Business	395
CAD/CAM	395
Clip Art	396
Communications	397
Dental	397

Educational	397
Engineering	398
Entertainment	398
Fonts	400
Genealogy	400
Graphics	400
Graphic Translators	400
Hyper Card Stacks	401
Import/Export	401
Languages	401
Legal	401
Medical	401
Music/MIDI	401
Nutrition	402
Programming Tools	402
Property Management	402
Public Domain	403
Religion	403
Sales/Marketing	403
Scientific	403

Statistics	403
Training	403

Services

Computer Insurance	403
Computer Repair	404
Data Conversion	404
Data Recovery	404
Desktop Publishing	404
Laser Recharge	404

Accessories

Cases	405
Diskettes	405
Furniture	406
Supplies	406

Advertising Rates and Information

The Macworld Shopper section is a monthly link-up for buyers and sellers of Macintosh-related products and services. The Macworld Shopper offers advertisers a low-cost sales opportunity and provides readers with a timely, easy-to-use menu for product buying.

The Billboard section of The Macworld Shopper offers four-color advertising in a 1/3 page and a 1/6 page format.

The Catalog section of The Macworld Shopper offers display ads sold by column inches (2" minimum) with the option of adding a second color, Macworld Standard Red. Text only listings are also available.

For more information on The Macworld Shopper

Call 800.888.8622

Advertising Sales Staff

Niki Stranz
Account Manager, Billboard
415.978.3105

Carol Johnstone
Eastern Account Manager, Catalog
415.978.3152

Wendi Smith
Western Account Manager, Catalog
415.978.3117

Beverly Schneider
Telemarketing Sales Manager, The Macworld Shopper

Call 800.888.8622

BILLBOARD

MACOUTLET PRODUCT GUIDE



1-800-622-6885

FAX YOUR ORDER 510-623-8894

**FULL LINE
OF A/V SCANNERS
NOW IN STOCK!**

RasterOps 24L 16" Trinitron System.....	\$2495
RasterOps 24SX/264 30.....	\$649/\$579
RasterOps Grayscale System.....	\$1299
RasterOps 24XLI 24 Bit Accelerated.....	\$2399
RasterOps 24STV/24XLTV.....	\$1149/\$2699
RasterOps Espresso Slide Scanner.....	\$ 699
RasterOps 24XLI Trinitron System	\$5,299
E-Machines T-16/TX-8/T-19/E-16 8 or 24 Bit...	\$CALL
Daystar Fast Cache II.....	\$ 259
Daystar IICI 40mhz PowerCache for most Macs	\$ 895
Daystar IICI 50mhz PowerCache for most Macs	\$1295
NEC New FG Series Monitors IN STOCK!.....	\$CALL

Authorized dealer for all products. 48860 #103C Milmont Dr., Fremont, CA 94538

Circle 577 on reader service card

SUPER SOFTWARE

Lowest Prices • Fastest Service
Best Selections

Each Pak has 8 Double Sided
Disks

Over 100 programs for only \$23
Save even more!

Get any 3 Paks for only \$60
Your satisfaction guaranteed!

from **SoftShope, Inc.**

CALL 1-800-851-8089
or 1-313-761-7638 for inquiry

P.O. Box 3678, Ann Arbor, MI 48106
or 1-313-761-7639 for FAX

Great Offers for You and your Mac!

Each Pak contains lots of features:

LASER PAK

PostScript Laser Fonts and utilities.

HYPER PAK I

HyperCard™ stacks for business.

HYPER PAK II

HyperCard™ stacks for games.

HYPER PAK III

HyperCard™ stacks for science
and education.

& MORE!

MORE!

MORE!

**so, HURRY...
ORDER TODAY!**



UTILITY PAK

RELIGION PAK

EDUCATION PAK

MUSIC/SOUND PAK

DESK PAK

GRAPHIC PAK

GAME PAK

BUSINESS PAK

KID PAK

FONT PAK

LASER PAK

HYPER PAK I

HYPER PAK II

HYPER PAK III

Add shipping cost \$4.00 and additional \$5.00 for C.O.D. order.
We accept personal check, Money Order, Visa, and Master Card.

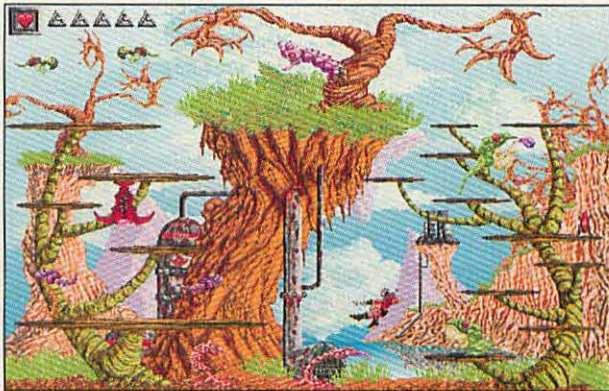
Circle 578 on reader service card

2 5 6 C O L O R A R C A D E A C T I O N G A M E !

You are Eborix 7, Point Lancer of the
Guardian Legion ...



Enter the world of **BLADE™** and experience for the first time the full
intensity of 8-bit animated graphics and stereo digitized sound. You've
never seen your Mac do THIS before!



A C T U A L M A C I N T O S H S C R E E N



SYSTEM REQUIREMENTS

Macintosh Modular
Computers
(LC, SE, II, Ix, CX, CI, FX)

2 MB RAM Minimum

8-Bit Graphics

Minimum 640 x 480
Resolution Monitor

System 6.07 or Later
System 7 Friendly

FOR MORE INFORMATION,
OR TO ORDER **BLADE™**
CALL 1.800.252.5029

LEVIATHAN

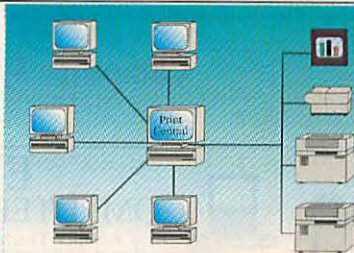
Circle 581 on reader service card

For your ad to appear in The Macworld Shopper, please call **800.888.8622**

BILLBOARD

Now, Print Central 2.0!
What the Apple Print Server wanted to be!

Never wait for a printer, never make a printer wait... Running on any Macintosh, Print Central publishes itself as one or several Chooser-level printer(s) over your AppleTalk network. It quickly receives documents (any application, including PageMaker) from multiple workstations and spools them to one or several PostScript printers, all simultaneously! Comprehensive job tracking and audit reports are standard. **Print Central 2.0** adds **remote** control and status from any Mac on the network, as well as printer hiding and increased security.



Computation

820 N. University Dr., State College, Pa. 16803 (814) 238-2120 Fax 234-6864

Circle 583 on reader service card



Smart Alarms with Appointment Diary

Let New Smart Alarms 3.1 take care of your daily schedule. Just enter your appointments into the Diary and Smart Alarms will remind you of your important appointments. Single User & Multi-User versions are System 6 & 7 compatible. New features include a persistent reminder feature, auto-backup, a snooze function and links to portable personal organisers.

Multi-User runs on all Mac networks.

Smart Alarms went into space on the shuttles Atlantis & Discovery

Publisher: JAM Software USA

843 West Main St., Meriden CT (203) 630-0055



Circle 575 on reader service card

Bible Study Tools to Find the Right Answers



Verse Search 5.0 offers instant access to every word or verse in the Bible (NIV, RSV, NRS, KJV, or NKJ). Our family of Bible study products includes Topical Bible, Thesaurus, Concordance, Bible Dictionary, Chain References, Greek/Hebrew transliterator, Chronological Bible and Personal Commentary.

Bible Research Systems 800-423-1228

2013 Wells Branch Parkway #304, Austin, Texas 78728

Tech Support (512)251-7541 Call for free Catalog. Satisfaction guaranteed.

Circle 582 on reader service card

MacPalette™ II ImageWriter Color Printing

250,000 colors - from an ImageWriter II. Works with almost any software - quickly and easily from within the Chooser. And fully System 7.0 compatible.

Requirements: SE/30, Mac II series, Classic II, LC, Quadra series or PowerBook 140/170; an ImageWriter II and a standard four-color ribbon.

20421 Stevens Creek Blvd., Suite 240
Cupertino, CA 95014
408 253 2000 • FAX 408 253 2055



AppleTalk Version... \$249

**Call Microspot at
1-800-622-7568**

Circle 584 on reader service card

Direct Response. Direct Results.



"As soon as our new 4-Color **BLADE™** ad came out in the Macworld Billboard, we received hundreds of calls from all over the world." Mark Fortuna
Founder, Leviathan Corporation

THE **MACWORLD**
SHOPPER

For your ad to appear in The Macworld Shopper, please call 800.888.8622

CATALOG

Hardware Bar Code

BAR CODE READERS

- Top rated by independent review!
- Complete with steel wand — \$399
- 64K Portable with wand — \$799

"The WDP Reader is highly reliable and easy to use." Brett Fifield, Bitstream Inc.

WORTHINGTON 417 Ingalls Street
DATA SOLUTIONS Santa Cruz, CA 95060

- For all Macintosh models
- Attaches as second keyboard
- 2of5, UPC/EAN, 128, MSI, Code 39
- Magstripe, laser, or wand input
- Same day shipping, Free UPS Blue
- 2 year warranty
- 30 day money back guarantee

800-345-4220

OR 408-458-9938

BAR CODE & MAGNETIC STRIPE READERS FOR MACINTOSH PLUS, SE & II

Connects on keyboard or ADB
Requires no additional program or port
Does not affect keyboard or mouse
Industrial quality, heavy-duty units
Also available
SmartCard encoder/reader
Magnetic encoder
Code 39 UPC & Printing Software
Portable Bar Code Reader

TPS Electronics
4047 Transport Street
Palo Alto, CA 94303
415-856-6833 800-526-5920
Telex: (Graphnet) 371 9097
FAX: 415-856-3843

CIRCLE 441 ON READER SERVICE CARD

Here's what Paul
Greenberg, President of
MacOne has
to say about
The Macworld Shopper:

"Better leads across
the board...
clientele is
superior...customers
that call in are
serious and
ready to buy."

CD Rom

CD ROM NEWS

LASERdirect

SUPER DEALS!

NEC CDR-36 (complete kit).....	\$ 459
NEC CDR-76 (300 MS).....	\$ 649
CD-Technology Porta Drive (325 MS).....	\$ 589
Purchase any drive and get the Atlas Pack and Illustrated Encyclopedia for only.....	\$ 119

Front Page News.....	\$ 89
Quantum Leap MacAdemic.....	\$ 69
FindIt - Webster Talking Dictionary.....	\$ 69
Sporting News - Baseball.....	\$ 69
U.S. Presidents.....	\$ 39
Coates Art Review: Impressionism.....	\$ 75
Bible Disc.....	\$ 89
New England Journal of Medicine.....	\$ 299
The Family Doctor.....	\$ 79
Beethoven's 9th.....	\$ 69
Stravinsky - The Rite of Spring.....	\$ 69
CIA Fact Book.....	\$ 89
Publique Art (clip art).....	\$112
Magic Flute.....	\$ 39
Dictionary of the Living World.....	\$189
Spaceship Warlock.....	\$ 85
Disc to the Future.....	\$ 79
The Orient Travel Encyclopedia.....	\$219
Washington Times/Insight On News.....	\$ 89
EPS Professional.....	\$189
Desert Storm.....	\$ 29
All of MacTutor, Vol. 1-6.....	\$159
Yellowpages.....	\$249
North American FAX Directory.....	\$299

ORDERS AND FREE CATALOGS DIAL
1-800-835-2737

8 Blackman Road, Moores Forks, N.Y. 12959

CIRCLE 418 ON READER SERVICE CARD

Computer Systems



ELITE COMPUTERS & SOFTWARE

Buy • Sell • Trade • Lease • Repair • Service

We Buy & Sell
Any Quantity
Of Macs And
Accessories!
Come On Down
For MacWorld
Specials. We're
Just 40 Min South
of San Francisco.
Lets Deal!!

System v7.0 / Mac SE/30 40-2 .. \$59 / Call
Mac Plus / Mac Classic 40-2 \$549 / \$1089
Mac SE 20-1 / Classic II 40-2 \$899 / 1449
Mac LC 40-2 / Mac IIsi 40-3 \$1549 / \$2349
Mac IIsx 40-2 / Mac II 40-2..... Call / \$1999
Mac IIs 40-2 / PowerBooks ... \$2499 / Call
Mac IIsi, IIsx, Quadra 700 & 900 Call
LaserWriter Plus, II NT, NTX, IIf, IIfg .. Call
Lowest Prices Guaranteed !!

Authorized Dealer: QMS, Radius, RasterOps, SuperMac, Claris, Abaton & More



(408) 725-1556

Fax
(408) 973-1483

Post Office Box 870 • Cupertino • CA • 95015-0870 • Hours: M-F 8:00-6:30, Sat 8:30-5:00
Prices are subject to change without notice. These are cash prices. Quantities are Limited

CIRCLE 493 ON READER SERVICE CARD

WANTED: USED MAC'S

WE BUY YOUR USED MAC EQUIPMENT FOR TOP DOLLAR, CASH! WE SELL REFURBISHED
MAC'S AT DISCOUNT! CALL FOR QUOTE. **RENTEX INC.** (800) 545-2313, (617) 423-5567

CIRCLE 521 ON READER SERVICE CARD

1-800-334-KIWI

Mac Classic 2/40mb...\$1149
Classic II 2/40mb.....\$1549
Classic II 4/105mb.....\$1849
Mac LC 2/40mb with
14" color monitor.....\$2099
Mac LC 4/105mb with
14" color monitor.....\$2399
Mac PowerBooks.....\$Call
Mac IIsi 3/40mb.....\$Call
Mac IIsi 5/105mb.....\$Call
Mac IIsi 5/105mb.....\$Call
Mac Quadra.....\$Call
H.P. Deskwriter.....\$450
H.P. Deskwriter C.....\$750
Personal Laser LS.....\$899
Personal Laser NT.....\$1749
All items new. 1 year warranty.
Most items in stock today.
Visa & Mastercard No Surcharge.
C.O.D. orders accepted.

KIWI COMPUTERS
P.O. Box 67381
Los Angeles CA 90067
US & Canada (800)334-5494
In California (213)553-4507
Fax (213)286-9667
Mon-Fri 8.30am-4.30pm PST

CIRCLE 404 ON READER SERVICE CARD

\$300 Notebook

NEW From Laser



Transfer MacWrite, Word, Excel or
most any other files to and from your
Mac with DataViz MacLinkPlus™.
• Built-in software: wordprocessor,
spreadsheet, filer, spell checker,
phone directory, expense account,
appointments, calculator & BASIC.
• Data transfer, printer cables, AC
adapter and carry case included.
• Full-size, full-travel keyboard.
• 7.6"x10"x1.6", 2 lbs. • 40 hours
work-time on 4 AA batteries.
• One year limited warranty.

SAVE \$25 **\$299.90**
NOW
800-243-9069 • FAX 708-564-2664
NewData • Box 4014 • Northbrook, IL 60065

CIRCLE 412 ON READER SERVICE CARD

For your ad to appear in The Macworld Shopper, call **800.888.8622**

CATALOG

Computer Systems

Mac One Your #1 Export Source!

The Latest Macs...
Classic II • LC • SE • Plus • Quadra • PowerBook
...and much more!

Route #107 • Glen Head, N.Y. 11545

Why Buy from Mac One? Here's Why!

- Mac-Knowledgeable & Personalized Service Since 1987
- Safe & Reliable Worldwide Delivery • 48 Hours to Europe!
- We Specialize in Exporting - our competitors DON'T!
- Our New York Location + Experience = Great Deals!
- We Stock what we sell, we are NOT Computer Brokers.
- Foreign Orders 110/220V Our Specialty... Fax Us!
- No Sales Tax. Due On Sales Outside New York State.

Our Small Ads mean BIG Savings for YOU!

516.626.5572 • Fax 516.626.5573

U.S. Sales Line Open: Monday-Friday 10am-6pm EST N.Y.
Fax Line: Open 24 Hours - Call us for weekly specials!

We also carry Apple II, Commodore, IBM, and other non-Mac computers. All prices subject to change. Call & compare for best value. All items sold as-is.

Circle 410 on Reader Service Card

QUADRA
AT THE LOWEST PRICES

(800) 880-8888
8760 RESEARCH BOULEVARD, AUSTIN, TX, 78758

Mac In Town

Buy, Sell, Rent or Lease Your Favorite Macs

CALL 800-MAC N TOWN
or 201-224-4273
International Orders - FAX 201-224-6449

Circle 574 on Reader Service Card

#1 Best Mac Buys

When it comes to used Mac's, we're the best. As the Nation's largest buying force, we stock over \$1 million in used Mac's, unmatched anywhere and at the lowest prices around. When we say refurbished, that's exactly what we mean, not wipe and send. Our quality control department assures you the best machine available for the money—or your money back—guaranteed.

For Free Catalog Call Anytime
1-800-821-3221

Box 4059—Logan, UT 84321, Fax: 801/755-3311

Sun
Remarketing, Inc.

Circle 424 on Reader Service Card

CRA 700 So. University Parks Dr., Suite 350
Waco, TX 76706

We Buy and Sell New and Used Systems Any Quantity
Phone 817-754-2120 / FAX 817-754-2345

New Macintosh CPU's (Le, Si, Ci, Fx, Quadra 700 & 900, Powerbook 100, 140, 170)
Used & Demo Macintosh CPU's (Se, Se30, Portable, II, Cx, X, Ci, X, Ci, Fx)

CLEARANCE SPECIALS

Apple LaserWriter IIxt, IIfx, IIfx	Call	FastPath 4 Ethernet Router NEW	\$1499
Mitsubishi G370-10U Color 300dpi		Howtek Scanmaster III w/Trans Opt. NEW	\$3999
w/Freeform of the Press Postscript driver	\$3999	HP Scan-Jet 400 dpi 160S DEMO	\$899
QMS Colorscript 100-10 DEMO	\$5500	Laserwriter Plus Upgrade Rom NEW	\$399
QMS PS Jet Plus 8ppm Postscript Laser	\$1999	Mastor 650 meg SCSI NEW	\$1499
Supernac 19" Color New & Used	\$1295	Minus, Montage & Agfa Film Recorders	Call
E-Machines Color Page 15" w/8 Bit	\$1100	PhoneNet StarController NEW	\$759
Mitsubishi 16" 1024 X 768 w/8bit	\$1599	Rodime 210 Cobra	\$699
RasterOps Trinitron, 8 & 32bit	From \$2999	Sharp JX450 11x17 color 24-bit scanner	Call
Sony 1908 Industrial Trinitron NEW	\$2699	Adobe Type Manager	\$54
Sony 19" Trinitron DEMO	\$1999	DiskFit v.1.5	\$45
600 X 600 DPI Postscript Laser	\$2499	MacDraw II (w/free Pro Upgrade)	\$279

Circle 499 on Reader Service Card

MAC CLASSIC 2/40 \$1100
MAC CLASSIC II 2/40 . STOCK
MAC CLASSIC II 4/105 STOCK
MAC LC 2/40 \$1575
MAC LC 4/80 \$1829
MAC SI 5/80 \$2299
MAC SI 5/105 \$2349
MAC SI 5/120 \$2399
MAC II CI 4/80 \$2999
MAC II CI 4/120 \$3099
MAC II FX 4/80 \$4349
NEW QUADRA 700 . IN STOCK
NEW QUADRA 900 . IN STOCK
NEW POWERBOOKS IN STOCK
PERSONAL LS/NT .. \$879/1729
LASERWRITER IIG IN STOCK
LASERWRITER IIF ... IN STOCK
APPLE STYLE WRITER ... CALL
14" VGA COLOR \$349
EXT. 101 KEYBRD \$122
GCC PLP II BEST
GCC PLP II S PRICES
GCC BLP ELITE IN STOCK!
RADIUS COLOR PIVOT \$1269
RADIUS MONO PIVOT ... \$699
PRECISION 24 BIT CARD \$CALL
SONY 1304 (NI .25 DA) . \$569
QMS PS 410 \$1699

WE SELL ONLY BRAND NEW COMPUTERS

Micro USA

1-800-227-6888

NO CREDIT CARDS PLEASE
(213) 473-2535 FAX (213) 473-5236

Circle 427 on Reader Service Card

Best Prices, New Macs!

Classic 2/40 \$Low
SE/30 -2/40mb \$2199
Mac LC 2/40 \$Low
Mac IIsi 3/40 \$2349
Mac IIfx 4mb \$4649
P-Laserwriter NT \$1649
14" Color Monitor \$448
Powerbooks + Quadras \$Low
SE, More Products \$Best
Best Service, Delivery. COD.
Call for latest price.
Prize Computers
12260 Garvey Ave, Ste#14
El Monte, CA 91732
818/575-1626 Phone/Fax

the mac store

Best Prices In Canada Since 1989
No Customs Hassles
The Best Warranty In The Business
Same Day Repair/Replace
Satisfaction Or Money Refunded
True Mac Experts On Staff
All Major Hardware, Software
Service Contracts

(416) 466-8107 / (800) 268-7805

Circle 426 on Reader Service Card

For your ad to appear in The Macworld Shopper, call 800.888.8622

CATALOG

Computer Systems

Macs & Upgrades!

Used Macs!	Upgrades!	
Mac IIfx 0/0.....\$3499.	II to IIfx..... \$1999.	
Mac IIfx 0/0..... 2499.	SE to SE-30..... 799.	
Mac II 2/0..... 1799.	800k to 1.44 mech. 235.	
SE-20 w/kb.....1049.	Parts! Parts!..... Call	
Mac IIfx 2/0..... 1999.	Logic bds., Power Supplies	

Shreve Systems Call for **Catalog!** FAX 318-742-2799
3804 Karen Ln. Bossier City, La. 71112 Int'l. 318-742-2700

800-227-3971 We Buy Macs!

CIRCLE 425 ON READER SERVICE CARD

We Buy Used Mac's **Call Dean**

ACP
1317 E. Edinger 92705
Santa Ana, CA 92705
714/558-8822 • 800/347-3423
714/558-1603
Fax 714/558-1603
Established 1976

We Buy Used PC's

- We Take Trade-ins. Trade-in your Old Computers for New Systems.
- We do Upgrades. Upgrade your XT to a 386. Add Memory or Speed to your Mac Hard Drives

CIRCLE 529 ON READER SERVICE CARD

Mac S.A.L.E INTERNATIONAL
New Jersey

Call for Mac World Specials

Entire Macintosh Line
New and Used, Bought and Sold
We carry the latest models in stock!

1-800-729-7031
Compare Our Prices, Quality & Service.
We'll pay cash for your Macintosh Equipment.

CIRCLE 401 ON READER SERVICE CARD

The Macworld Shopper Your Power Source

Shop For The Best Price. (But Make Sure These Four Freebies Are Included:)

1. Service

Work with a Mac pro, not an order-taker. Expert help ensures the right choices for your needs and budget.

2. Selection

Classic or Quadra. Custom or standard. Apple or third party. We'll help you build your system, your way.

3. Safety

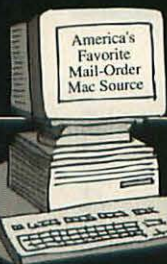
Mac•In•Stock is the only dealer who will bench-test your system, and use double boxes for safe shipment.

4. Support

Tech support is toll-free. Repairs or replacements are handled via Federal Express (in and out at our expense).

Mac•In•Stock®

VISA, MasterCard, and American Express welcome.



Want great prices and great service? Call:

800-944-MACS

Fax: 305-321-0905 • Int'l: 305-321-0904

- Mac logic board upgrades available!
- Radius
- RasterOps
- SuperMac
- Quantum
- MicroNet
- Mass Micro

- 24-month warranty available!
- GCC
- QMS
- NewGen
- Abaton
- Microtek
- Howtek

©1991 Hi•Re! Marketing, Inc. dba Mac•In•Stock, Ft. Lauderdale FL

CIRCLE 457 ON READER SERVICE CARD

For your ad to appear in The Macworld Shopper, call 800.888.8622

CATALOG

Computer Systems

**Used Mac
Equipment!**
Access II

26 Keewaydin Drive
Salem, NH 03079
1 (800) 662-5606

Don't buy or sell
any new or used
equipment until
you talk to us. We
deal exclusively
in Macintosh
equipment. Call
today for the best
deals anywhere!

CIRCLE 469 ON READER SERVICE CARD

MacBYTE

Buy • Sell • Trade Macintosh Computers

Preowned Macs with Warranty
Cash For Your Mac or Peripheral
Low & High End Custom Setups
FAX 213-317-1583

800-432-BYTE

Open Monday - Saturday
22775 PCH, Malibu, CA 90265

CIRCLE 428 ON READER SERVICE CARD

New RackMacs™

Macintosh LC and 13" RGB Monitor in one
19 inch rack-mounted NEMA 12 package.
Ideal for operator control stations.

Industrial grade Mac IIx, IIcx, and now
IIci available with matching industrial
touchscreen display and rack-mounted
keyboard/mouse drawer. For vehicle, medical,
laboratory, automated test, process control
and operator entry applications.



GreenSpring Computers Inc.

1204 O'Brien Dr. Menlo Park, CA 94025
415-327-1200

CIRCLE 519 ON READER SERVICE CARD

*I saw it in
The
Macworld
Shopper.*

WE WILL NOT BE UNDERSOLD!

Mac Classic II	Call
Mac LC 2mb/40HD w/kb	1620
Mac II 2mb/40HD	2050
Mac IIx 5mb/80HD	2550
Mac IIsi 3mb/40HD	1999
Mac IICI 5mb/105HD	3150
Mac IIcx 4mb/105HD	4585
Mac IIcx 8mb/345HD	5485
Mac Quadra/Notebooks	Call
Apple IIGS	350
RasterOps 19" Trin, 24xLi	5099
RasterOps 19" Trin, 8xLi	3899
Radius 19" Color+24bit	4899
Radius Color Pivot	1285
Ikegami 20" Trin, 24bit	3495
SuperMac w/24bit PDQ	5590
Abaton Laserscript LX	1595
HP Deskwriter color	750
Lsrwriter IIF/IIG	Call
LaserMax 1000/1200	Call
NewGen High Res Printers	Call
Microtek TrueLaser	1399
QMS/GCC/Ptrs	Call
Seiko ColorPoint, 11x17	7850
Microtek 600ZS	1388
Sharp JX-450 w/GPIB	4585
UMax 630 w/pshop, OCR	1388
DayStar 50Mhz Pwr+Co	1790
"Cordless" Mouse	Cheap

DEALERS AND INTERNATIONAL SALES WELCOME.
Best Prices, Service, Delivery! Call or fax for best quotes

DATA COMPUTER CENTER
TEL 310-470-9555
FAX 310-470-9457
2255 Westwood Blvd
Los Angeles, CA 90064

CIRCLE 508 ON READER SERVICE CARD

Disk Drives

new hard drives!

105 MB, 12ms
internal **\$299!**
external **\$359!**

210 MB, 12ms
internal **\$499!**
external **\$569!**

"4 1/2 Mice"

"Frog Systems...manages to combine
a competitively low price
with high-quality performance."
MacUser (UK, 6-28-91)

	Internal	External
Frog 45 MB (12ms).....	\$219	\$279
Frog 100 MB (18ms).....	\$259	\$329
Frog 330 MB (14ms).....	\$1039	\$1099
Frog 676 MB (15ms).....	—	\$1499
Frog 1 GB (15ms).....	—	\$2099
Frog R45 (SyQuest, 20ms)...	—	\$445

30 day money-back guarantee • 1 year full warranty
all necessary cables and software included
visa and mastercard accepted

1-800-654-3764
frog systems, inc.

4301 oak circle #20 • boca raton, florida 33431 • fax 407-391-8675

CIRCLE 414 ON READER SERVICE CARD

Memory Upgrade

SIMMS

1 MB
to
16 MB

For: Plus/SE/SE30/Classic/LC
II/IIx/IIci/IIcx/IIsi/IIfx
Portable 1 MB to 8 MB
LaserWriter NTX

CACHE CARD

IIci
&
IIsi

ACCELERATOR CARD

128, 512, 512E, Plus, SE, Classic, LC

FAX/DATA MODEMS

For instant product info via ROBOFAX
Call 1-800-424-3299 Day or Night

**ADD★ON
AMERICA**

A DIVISION OF ROHM CORPORATION

433 N. Mathilda Ave.
Sunnyvale, CA 94086
Ph: 1-408-746-1590
Fax: 1-408-746-1593

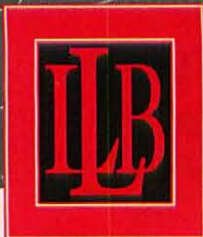
CIRCLE 415 ON READER SERVICE CARD

Continued...

For your ad to appear in The Macworld Shopper, call 800.888.8622

CATALOG

Memory Upgrade



The LLB Company

300 - 120th Ave NE Bldg. 7 • Suite 108 • Bellevue, WA 98005
Phone (206) 454-7258 • Fax (206) 454-7302

Energize your Macs with: **SIMMs**

1 x 8 - 80 ns
- as low as:

Quantity Pricing per Mb
Sold in 2 Mb sets

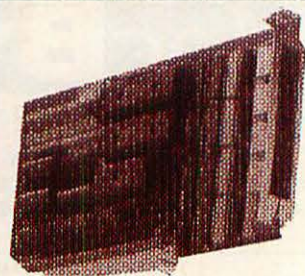
\$36

4 x 8 x 80ns
8 x 8 x 80 ns
16 x 8 x 80 ns
16 x 8 x 80fx
1 x 8 x 70 ns
1 x 8 x 100 ns
1 x 8 x 80fx
1 x 8 x 70fx
2 x 8 x 80ns
4 x 8 x 80 MacII/IIx
4 x 8 x 70
4 x 8 x 80fx
ToolKit

1,2,3 or 4 MacPortable
SIMMs
MacLC 512k Video
MacClassic 1Mb/3Mb Card

Cables

Serial cables, modem cables, SCSI cables



Applied Engineering Quadralink

Quadralink is the answer to clogged serial ports!
Fully compatible with the Mac's Communication
Toolbox and System 7.0. 5 year warranty.



Applied Engineering QuickSilver

Includes FPU. QuickSilver gives your IISI a slot
extender, cache card and math co-processor.
The extender enables cards created for the SE/
30 to fit neatly inside the IISI case. 5 year
warranty

68882 Math Co-Processor Boards and chips

68030 Accelerators

with optional math chips for SE, Plus,
Classic.



Always low prices
on the removables you trust
44 MB SyQuest Cartridges

NEW! 88 Mb Cartridges from\$119

\$66

DayStar Universal PowerCache

33, 40, or 50 Mhz



Lexus Turbo Modem

Compact 2400 baud
modem. Easy to install



Applied Engineering
Internal Mnp5 Fax/Modem board
Fits MacIIx only.

Compare our low shipping prices:

- 16 overnight shipping by Airborne Express - 13 ground shipping by UPS
- Orders received before 7:30 PM Eastern time weekdays ship the same day
- All Educational and governmental PO's accepted upon approval
- Bank cards accepted. Your card is not charged until the order is shipped.
- We export to most countries in the world
- Quantity pricing for dealers

All Government and Educational PO's accepted
Fax your orders 24 hours a day • Call between 7 am and 6 pm Pacific Time

1-800-848-8967

Ext. MW

CIRCLE 573 ON READER SERVICE CARD

For your ad to appear in The Macworld Shopper, call 800.888.8622

CATALOG

Memory Upgrade

PB Ram™

Memory For All Powerbooks



\$Lowest
per
2 MByte

- 2/4/6 MByte
- Upgradeable!
- Gold Plated

16 MB SIMM's \$825
(for Mac IIfx, IIfx, IIfx, Quadras)

- 16 or 32 MB SIMM kit (4 or 8 -4 MB / -80 ns) for the Mac II, IIfx, cx, ci, si, fx, Quadras \$575 / \$1150
- 8 MB kit for the Mac LC or SE/30 \$288
- 2 MB SIMMs for the Mac IIfx, IIfx, LC \$99
- 4 MB SIMM kit for any Macintosh \$159

PortaRam™

for the
Mac
Portable

• Call if you
find a lower
price - we'll
beat it!



\$225*
per
Mega-
byte
(1 to 8)

- One to Eight Megabyte
- User Upgradeable!
- Built-in Surge Protector
- Gold Plated Boards
- Uses RAM Slot - Not PDS
- Very Thin 5/8" Max

Shadow Technologies

1767 Morning Glory Road

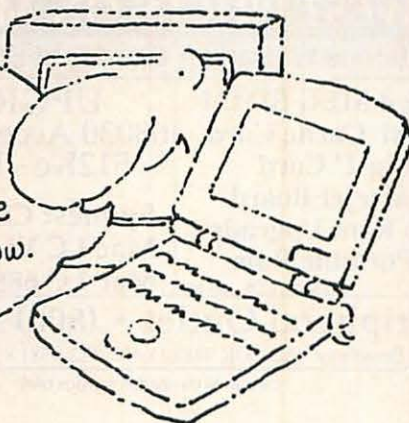
VISA Livermore, CA 94550

M/C (510) 548-0130

CIRCLE 462 ON READER SERVICE CARD

RAM Cards and Big Screen Video for the Mac PowerBooks.

Mighty
ideas
from little
Macs grow.



The Macintosh PowerBooks bring a new era of flexibility to Mac computing. Now you can have a real Mac the size of a book that fits in your briefcase. To make those mighty ideas grow, you need more RAM and a big screen. Here they are:

1. BookRAM™ memory card for all PowerBooks. Comes with 2 megs, 4 megs or 6 megs of Pseudostatic RAM, factory upgradeable. Makes your Powerbook a MultiFinder monster with new memory elbowroom.

2. BookRAM™ DRAM memory card. Deft circuit design yields low cost and low power drain for a 4 meg card. Maintains battery life.

3. BookView™ An adapter for a second external screen in addition to the current screen. A dealer installed adapter that duplicates the visual display on the built-in LCD screen and interfaces to major displays.

4. BookView™ Imperial. Adds 4 megs of DRAM and provides color or grey scale

monitor output for the 68030 models and monochromatic output for the 68000 model. Supports standard and full page VGA, Apple monitors, NTSC and overhead projectors.

Call for prices on 1 meg, 2 meg and 4 meg SIMMs, Softstep® and Two Step™ memory expansion modules, Pac RAM™ for the Portable, Video Mac Pac for the Portable, and Mac Rescue™ upgrade board for Enhanced 128K & 512K Macs.

See us
at Brooks
Hall, Booth
#5710



Computer Care

Dealer inquiries welcome. Visa, MC, AMEX, Discover accepted.

Ford Centre, Suite 1180
420 North Fifth St.
Minneapolis, MN 55401
(612) 371-0061
(800) 950-CARE (2273)
(612) 371-9342 Fax
AppleLink: D6962

CIRCLE 505 ON READER SERVICE CARD

Results

The Macworld Catalog

Delivers

Continued...

Only
The
Macworld
Shopper
gives you
the results
you've been
dreaming
about.

For your ad to appear in The Macworld Shopper, call 800.888.8622

CATALOG

Memory Upgrade

LOWEST PRICES ON MEMORY!

Lifetime Warranty • Overnight Shipping \$8-

1, 2 & 4 MEG SIMM
Ici/IIsi Cache Card
IIsi '3-in-1' Card
HP Laserjet Board
Video Ram Upgrade
Mac Portable Ram

Visa & MCOK - add 3%

UPGRADES
68030 Accelerator-Call
512Ke - Plus \$255
Syquest Cartridges
Mac LC Video SIMM
Mac LC 68882 Math FPU

Peripheral Outlet • (800) 332-6581

314 S. Broadway • Ada, OK 74820 • 405-332-6581 • Fax 405-436-2245

CIRCLE 454 ON READER SERVICE CARD

MEMORY DIRECT

"Don't pay retail...buy direct"

MEMORY

Memory Upgrades for your Macintosh

Mac Classic, SE, Plus

2 MEG KIT - \$92 • 4 MEG KIT - \$172.

MAC LC

2 MEG KIT - \$92 • 4 MEG KIT - \$210.
8 MEG KIT - \$350 • 512K VRAM - \$110

MAC IIsi

4 MEG KIT - \$178 • 8 MEG KIT - \$420.
16 MEG KIT - \$740.

MAC SE/30, IICx IICi

4 MEG KIT - \$178 • 8 MEG KIT - \$352.
16 MEG KIT - \$740 • 32 MEG KIT - \$1432.

MAC II, IIX

4 MEG KIT - \$178 • 8 MEG KIT - \$352.
16 MEG KIT - \$780 • 32 MEG KIT - \$1520.

MAC FX & LASERWRITER II NTX

4 MEG KIT - \$199 • 16 MEG KIT - \$810.
32 MEG KIT - \$1590.

★ New 16 MEG SIMMS
for Quadra 700/900 - \$975

★ 2,4,6 Megs for the new Notebooks

DAYSTAR

Accelerators for your Mac

MAC LC, IIsi, IIC, II, IIX, IICx, SE/30	w/ 68882 Math Chip
33Mhz PowerCache	\$749
40Mhz PowerCache	\$949
50Mhz PowerCache	\$1680
FastCache IIsi	\$315
FastCache IICi	\$259

SCSI power Card \$1149

0-256 Meg RAM Power Card - \$749.

SUPERMAC

Accelerated Graphic Cards	Displays
Thunder/8	\$1399
Thunder/24	\$3399
Spectrum/8-24 PDQ	\$1029
Spectrum/8-24ai PDQ	\$1029
Spectrum/24 PDQ	\$1029
w/ Display Calibrator	\$3159
	21" 2 Pg. Color \$3219
	19" Supermatch-Color \$2049
	19" Dual Mode Trinitron \$3069
	19" Platinum \$1029

Highest Quality • Lifetime Warranty • Free tool included • Same day shipping



1-800-486-CHIP (2447)

FAX (714) 847-5043

Prices subject to change

CIRCLE 516 ON READER SERVICE CARD

Peripherals

Mac News

1555 SHERMAN AVE • SUITE 361 • EVANSTON, IL 60201 • 24HR FAX 312-871-4556

Printers

**TEXAS
INSTRUMENTS**

TI microLaser Plus PS/17 **\$1,249**
9 ppm, 300 dpi, 17 PostScript fonts
35 PostScript font version just \$1,565



We carry the full line of
Texas Instruments Laser Printers

TI microLaser XL PS/17 **\$2,425**
16 ppm output, 300 dpi, 17 PostScript fonts
35 PostScript version also available

NEW TI microLaser
XL TURBO PS/35

Call

Displays

RasterOps Color System **\$3,595**
19" Color Trinitron Display with 8XLi

E-Machines T16 **\$1,595**

Award-winning 16" Color Sony Trinitron

E-Machines T16 XL/24 **\$2,645**

16" Color Display with 24-bit accel. card

SuperMac Displays & Cards **Call**

Visa
MasterCard
No surcharge

1-800-243-9383

Federal
Express

CIRCLE 599 ON READER SERVICE CARD

Macs

All Configurations Available.

Classic, 2/40 **\$1,099**

Mac IIsi, 3/40 **Call**

Mac IICi, 5/0 **Call**

Quadra 700 **\$4,295**

Quadra 900 **\$5,495**

PowerBooks **Call**

Publication deadlines don't
always allow us to advertise our
latest price. Call for latest details!

DayStar Cache Cards

PowerCaches

33 MHz **\$639**

40 MHz **\$835**

50 MHz **\$1,259**

FastCaches

IICi/IIsi **\$245/\$279**

Scanners

Microtek 600ZS

24-bit Flatbed **\$1,395**

Microtek 1850S

Slide Scanner **\$1,895**

Howtek

Personal Color Scanner

\$1,195

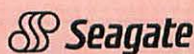
Prices subject to change without
notice. Warranties. All warranties
on Apple/Macintosh products sold
by MacNews will be honored by
MacNews or its authorized agents
only. All other manufacturer war-
ranties still apply.

The Macworld Shopper DELIVERS!

For your ad to appear in The Macworld Shopper, call **800.888.8622**

CATALOG

Peripherals



Video Packages

All Packages Include Monitor, Video Board & Cable!

19" Grayscale - 256 Shades	799
19" Color - 256 Colors	999
19" Trinitron - 256 Colors	1,999
19" Trinitron - 16-Million Colors	2,899

16 Million Colors!

19" Trinitron

Includes 19" Trinitron,
24-Bit Video Board, &
Cable - Complete!

\$2,899



24-Bit Color Scanner



Epson Engine

\$1,099 16-Million Colors!
High-Speed

Available with Color Studio LE and Scan-Do software.
Scans over 16,000,000 colors and 300 x 600 resolution!

Scanner Only (110 V)	1,099
Scanner with Software Bundle	1,249

SyQuest - 44/88 Meg.

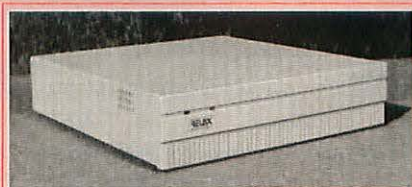


2-year warranty!

Complete System - includes cables, carrier, and software.	
Mobile 44 Vista - includes cartridge	429
44 Megabyte Data Cartridge	68
Mobile 88 Vista - includes cartridge	599
88 Megabyte Data Cartridge	119

© 1992 RELAX, Sierra, Mobile, and Vista are trademarks of Relax Technology, Inc.
All Trademarks and Registered Trademarks are the property of their respective holders.

Hard Disk Drives



170 Meg. \$599

Complete System - all cables and software included.
SWIFT, 15 ms. Special Purchase - for a limited time only!

	Internal	External
52 Meg. - Quantum LPS, 11 ms.	219	279
105 Meg. - SWIFT, 15 ms.	289	349
105 Meg. - Quantum LPS, 18 ms.	339	399
120 Meg. - Maxtor, 17 ms.	439	499
170 Meg. - SWIFT, 15 ms.	539	599
180 Meg. - Fujitsu, 20 ms.	599	659
210 Meg. - Quantum, 12 ms.	639	699
300 Meg. - WREN, 16.5 ms.	1,099	1,159
330 Meg. - RUNNER, 11 ms.	1,299	1,359
600 Meg. - WREN, 16.5 ms.	1,439	1,499
660 Meg. - RUNNER, 12 ms.	1,739	1,799
1.0 Gig. - WREN-7, 15 ms.	1,939	1,999
1.6 Gig. - WREN-8, 15 ms.	2,689	2,749

CD-ROM/Optical



Toshiba CD-ROM \$579

Includes cables, media (or carrier), and software.

CD-ROM Vista - Toshiba	579
Pioneer 6-Disc CD-ROM Player	999
600 Meg. Optical ISO - RICOH E-I	1,899
600 Meg. Optical ISO - RICOH E-II	2,799
600 Meg. WORM - Pioneer	3,199
1.0 Gig. Optical ISO - Tahiti-II	3,999



Call or FAX for FAST SERVICE! No surcharge for credit cards or COD, terms available for approved accounts. We ship same day via Federal Express.

Price -

Our size allows us to purchase at the lowest possible cost, and we manufacture in our own factory. Then we pass the saving on to our customers.

Performance -

Serious business and professional users demand top performance, the WREN Runner from Seagate and Quantum high-performance 3-1/2" drives.

Service -

All products are 100% tested - and you probably won't need our help - but if you do, our ESP service program will have you up and running in 48 hours - guaranteed!

Selection -

We offer more than 300 different products for the IBM, Macintosh and SUN. From 40 Megabyte portable hard disk to 24-Bit Trinitron video packages we offer more of what you need. Call for 1992 catalog.

Quality -

We only offer quality products that you can depend on. And if for any reason you are not 100% satisfied we offer a 30-day money back guarantee - We Guarantee Your Complete Satisfaction!



Tape Drives

160 Meg.

Transportable backup solution for the Mac.
Backup software, external power supply and cassette included!

\$529



All Tape Drives Include Media, Software and Cables

60 Meg. Tape Vista - TEAC	429
160 Meg. Tape Sierra - TEAC	529
2.0 Gig. Tape Sierra - Archive	1,359
2.2 Gig. Tape Vista - ExaBYTE	2,099
5.0 Gig. Tape Vista - ExaBYTE	3,329

510-471-6112

RELAX
TECHNOLOGY

3101 Whipple Road
Union City, CA 94587
FAX: 510-471-6267
TEL: 510-471-6112

We will **BEAT** any competitor's price for comparable product - call for details!

CIRCLE 422 ON READER SERVICE CARD

For your ad to appear in The Macworld Shopper, call 800.888.8622

CATALOG

Peripherals

Power Hungry?

5x Speed 68030 \$399
6x screen for Plus, Se
8x Memory and Classic
includes 16 mhz burst mode 68030, pmmu
fpv socket videocket / sftw/manuals

Video Capture Blowout!
Nubus Card w/ built in TV, \$99
video in, audio in, out, rf in
Sftw driver and manuals.

PIXEL ph 415-541-0718 Visa/MC/PO
fax 415-541-9984 30 day MB

CIRCLE 431 ON READER SERVICE CARD

ZOOM® Modems

Made in U.S.A. Fully Hayes-compatible with cables, software &
Free Shipping!

V.42bis data comp./error correction 2 yr. warranty.....\$159
Send/Receive Fax FX36/24 7 yr. warranty.....\$139

14" Color Monitor.....\$379
By Goldstar. Excellent quality; sharp, rich color at a great price.
Works on all Macs—LC needs optional adapter (\$15).

HWH Microsystems
Ponchartraine, Louisiana
800-673-0586
M/C & Visa Welcome

CIRCLE 593 ON READER SERVICE CARD



- A quality source of your external SCSI hard disks, tape backups, and combo units. Apple, Mac, IBM compatible.
- An exclusive manufacturer of all FIRST CLASS PERIPHERAL SIDERS. Also provide service, repair, and upgrade on existing models.
- See our AD in the upcoming issues of this magazine.

1700 Forrest Way
Carson City, NV 89706
Sales: 800-982-3232
Tech Spt: 702-687-2800

• PLEASE MENTION THIS AD •

HARD / TAPE / CDROM / OPTICAL

CIRCLE 564 ON READER SERVICE CARD

The Best Products, Prices and Service from

1-800-626-1889

Specializing in Desktop Publishing, Presentation and Video.

**DeskTop
Direct, Inc.**

RasterOps	24STV board	\$1155	DAYSTAR	FastCache IIci	\$255
	24s or 24si board	\$445 / \$645		SCSI PowerCard/OMB	\$1065
	24XLTV Video Color Board	\$2575		FastCache IIsi or with FPU	\$295 / 365
	24XLTV 19" Hitachi or Trinitron Sys.	\$4375 / \$5345		Dual Port IIsi or with FPU	\$95 / \$165
	24XLi 19" or 21" Hitachi System	\$4055 / \$5155		PowerCache II, IIX, IICX, IIci, IIsi, LC, SE/30...	
	24XLi 19" Trinitron System	\$5025		33MHz or with Math Chip	\$695 / \$895
	8XLi 19" or 21" Hitachi System	\$2765 / \$3865		40MHz or with Math Chip	\$895 / \$1095
	8XLi 19" Trinitron System	\$3735		50MHz or with Math Chip	\$1395 / \$1675
	8XL 19" or 21" Hitachi System	\$2255 / \$3355	RODIME	Cobra 100 Ext. HD	\$585
	8LC 19" Color Hitachi System	\$2125		Cobra 120 Ext. HD	\$665
	ClearVue/GSXL 19" or 21" System	\$1285 / \$1595		Cobra 210 External Hard Drive	\$885
	ClearVue/GSLC 19" Grayscale Sys.	\$1125	PLI	Infinity 40 Removable	\$595
	ColorBoard 264/SE30	\$575		Infinity 88 Removable	\$775
	ColorBoard 708+/SE30 or ClearVue/GS30	\$645		QuickSCSI Accelerator Card with cable	\$475

**Macworld
Special**

BÉZIER

BP4040 Personal PostScript Laser Printer \$1495
(RISC processor, TrueImage, TrueType, AppleTalk, 4ppm)

We are Authorized Dealers for all of the products we carry. All of our products are NEW. Business Leasing is available.

6113 South 380 West, Salt Lake City, Utah 84107 (801) 265-8882

CIRCLE 541 ON READER SERVICE CARD

Power Protection

Protect Your Mac!

BELOW LIST

Uninterruptible Power Supplies

- Power Surge • Power Filter
- Black Out Protection & More

\$269 and up

Visa
M/C
Discover



Authorized Dealer

(408) 336-8891 x101 24 hrs.

Dynamic Engineering

Printers

DeskINJECT™

Ink Cartridge Refilling System
For:
Deskwriter®
DeskJet®
Stylewriter®

**NO MESS
INJECTION
METHOD**

To order:
2 Refills for \$9.95
Plus \$2.00 for
Shipping & Handling
(CA residents please add 8% sales tax)
P.O. Box 720243
San Jose, Ca 95172
Bottom-Line Solutions

CIRCLE 421 ON READER SERVICE CARD

Questions?

Use the
Reader
Service Card
to request
free
information.

For your ad to appear in The Macworld Shopper, call **800.888.8622**

CATALOG

Software Astrology



McHoroSCOPE
Be your own astrologer,
for fun or profit.

Produce amazing astrological reports
for friends and family. **\$199.50**

"McHoroSCOPE" (Chart Interpreter) produces beautiful natal charts
plus 15- to 17-page interpretations. Professional astrologers
charge \$50.00 and more for similar reports. Excellent study guide
for students and great fun for parties and get-togethers.

Astrology for the Macintosh from Time Cycles Research

- Write or call for free brochure •

Time Cycles Research 27 Dimmock Rd Waterford, CT 06385
MC•Visa•Amex
(203) 444-6641

CIRCLE 447 ON READER SERVICE CARD

Bar Code


BAR CODES

• Print bar codes from PageMaker,
Illustrator, Quark, Word, etc.

- PostScript Fonts. Generate film masters
- Runs on Dot Matrix, Laser or Imagesetter
- **\$199** for Code 39 or UPC/EAN
- Complete bar code readers — **\$399**
- **30 day money back guarantee**

800-345-4220 OR 408-458-9938

WORTHINGTON
DATA SOLUTIONS 417 Ingalls Street, Santa Cruz, CA 95060



SOFTWARE
MAC-BARCODE
The Software that Enables Macintosh® Users to
Design and Generate Bar Codes for
Label Printing or Creating Worksheets.

Fully Supports New Code 128 International Shipping
Labels. 8 symbologies. The New York Times says -
"Mac-Barcode is both easy to use and versatile."

\$199.
Version 2.0 for
Apple® Macintosh®

1-800-733-7592

DATA CAPTURE INSTITUTE FAX 617-934-6233 PO 1625, Duxbury, MA 02331

CIRCLE 562 ON READER SERVICE CARD



**Bar Code
Fonts**

**New!
Version 3**

- ✓ Type 1
- ✓ PostScript
- ✓ UPC/EAN
- ✓ Supplements
- ✓ UPC/EAN
- ✓ Bar-Width
- ✓ Reduction
- ✓ Font Utility DA

• Code 39 • UPC/EAN • Interleaved 2 of 5 • PostNET
prints on ImageWriter, LaserWriter, Imagesetters
• Bar code readers starting at \$395.

Sales
1-800-BEAROCK
1-800-232-7625
FAX
916-622-4775

"Easy to use ... we love 'em!" — D.C.,
Digital Audio Disc, Div. of Sony

Bear Rock
TECHNOLOGIES

6069 Enterprise Drive • Diamond Springs, CA 95619

Business



Loan Amortization **\$49** US Funds
+ \$2 S&H

Computes: • Payments • Term • Interest Rate.
Prints Schedule to Screen or Printer.
Save Schedule Setups to disk for later retrieval.
7 Pmt. Freq. Options (ex: Weekly/Monthly etc.)

MC•Visa•Discover

**Campbell
Programming**

1-800-279-7764 Outside USA (701)-775-8541

CIRCLE 420 ON READER SERVICE CARD

PLANMaker™ Powerful Business Plan Software

- Self-contained Business Plan software for the Mac
- Expert Narrative describes your business at its best
- Sophisticated Financial Forecasts build credibility
- Create your Business Plan and/or earn excellent profits creating Business Plans for other entrepreneurs as a Business Plan Consultant

Launching or expanding a business can mean exciting profits. Bankers and investors now require a professional Business Plan. PLANMaker takes you step by step, page by page, from Executive Summary through Financial Forecasts. Easy entry boxes and an extended selection of narrative make customizing easy. Copy, Paste and edit. Your plan remains uniquely yours. All calculations and formatting are automatic. PLANMaker creates compelling business plans that sell your business idea.



Stand alone, requires no other software—\$129 + \$3 shipping
via AIRBORNE + \$6.25 s/h

PLANMaker
1920 S Broadway Dept 6
St. Louis, MO 63104
VISA/MasterCard/AmEx
Orders 1-800 955 3337
FAX 1-314 421 0668

MAC System 6.0.5 or later,
2 MBs RAM, w/Hard Drive,
VISA /MASTERCARD /AmEx
Include number, exp. date & sig.
Worldwide: phone 314 421 0670

Call for Brochure
1-800 955 3337

CIRCLE 586 ON READER SERVICE CARD

BizPlanBuilder™

Organize your ideas, coordinate your plans — convince others to support you. Intuitive, logical business & marketing plan template on diskette for launching a new product, service, or company. 90+ pages of outlines, headlines, written texts, tables... formatted into 33 MacWrite™ & MSWord™ files.

Follow tutorials, fill in the blanks, edit into a finished plan. 126-page reference includes important info about getting money from banks, the SBA, investors. Integrated financial worksheets in Excel (SYLK) are preformatted: includes detailed Budget, Income Statement, Balance Sheet, Cashflow Projection, Break-Even Analysis. Dazzle your boss, banker or investors. 37,000+ sold! v 4.0 \$129 + s/h

• BizPlanBuilder could be exactly what the business doctor ordered... I don't often see credible literature, but in this case, I am a believer. You owe it to yourself and your company to own and use BizPlanBuilder. — Leon Wortman, Software Editor, *Business Marketing*

Leverage Your Time & Macintosh
800/ 346-5426 toll-free
415/ 941-9191 worldwide
MC•Visa•Amex 30-Day Guarantee

CIRCLE 439 ON READER SERVICE CARD

CAD/CAM

Professional CAD Symbol Library



Over 3,000 CAD Symbols in One All-Inclusive Package

Architectural (Residential & Commercial), Interior Design & Site Planning, The "Plumbing & Heating Supply House", The "Hardware Store", The "Electronics Shack", Welding, General Drawing Aids, Cartographic, 180+ Page User's Manual, And Much More, All for \$149.95!

Advanced System Design, Inc.
1010 Stagecoach Blvd., P.O. Box 3131
Evergreen, Colorado 80439
(303) 674-2222 to Order

Compatible with
Claris CAD™
MacDraw II™
PowerDraw™ and
Canvas™

CIRCLE 408 ON READER SERVICE CARD

Your Ad Here!
Call 800.888.8622
The Macworld Shopper

For your ad to appear in The Macworld Shopper, call 800.888.8622

CATALOG

Clip Art

IMAGES WITH Impact!
NEW! People 1-Our Best Yet!
Versatile New Art for Business, Industry, Healthcare, Sports & MORE! ASK FOR FREE CATALOG!

Suggested Retail: \$189.95
3G Graphics, Inc.
11410 N.E. 124th St.
#6155-A
Kirkland, WA 98034
(206) 367-9321

© 1991 3G Graphics, Inc. All rights reserved.
800-456-0234
SPECIAL INTRO OFFER

CIRCLE 554 ON READER SERVICE CARD

AdArt *Clip Art For Advertising*
Encapsulated Postscript Images

LOGOS & TRADEMARKS, 1, 2, 3, 4 & 5
100 EPS Corporate Symbols per Vol.
INT'L SYMBOLS & ICONS, 1 & 2
FLAGS OF THE WORLD
VINYL CUTTER'S COLLECTION
Compatible with Vinyl Sign Cutting Equipment
BUSINESS SYMBOLS COLLECTION
SAFETY & PACKAGING COLLECTION
RECYCLED ART

FAX: 800-878-1768
800-255-0562
Innovation Advertising & Design
41 Mansfield Ave. • Essex Jct., VT 05452

CIRCLE 579 ON READER SERVICE CARD

THE SANTA FE COLLECTION
NATIVE AMERICAN & SOUTHWEST Images. Ancient to Modern Designs. Paint format. **500 ILLUSTRATIONS** and **140 BORDERS** on 3 DISKS! **FREE** Delivery. Check, P.O.

Orders & Information:
(505) 891-1600
1-800-245-7824
RT GRAPHICS COMPUTER \$79.95
602 San Juan de Rio, Rio Rancho, NM 87124

CIRCLE 458 ON READER SERVICE CARD

Metallie Attributes
Backgrounds for Multimedia 2 (in color!)
PICT images for presentations, slides and 3D texture mapping.
40 images + extras, CD-ROM \$289
800-444-9391 or 714-881-1200
ARTBEATS, Box 20851, San Bernardino, CA 92406

CIRCLE 430 ON READER SERVICE CARD

GOOD IDEAS™ CLIP ART
Margaret Summers, Inc.
3431 St. Blaise
St. Ann, MO 63074
Check/Money Order Only • We Pay Shipping • Call For Free Brochure

\$29 100+ Illustrations
2 Disks
Paint Format

800-736-5514

CIRCLE 406 ON READER SERVICE CARD

MAPS Illustrator, FreeHand, MacDraw II
World Continents Countries USA

Professional Quality Maps for Desktop Publishing & Graphic Design

For Your FREE Catalog call:
800-334-4291

MicroMaps Software • PO Box 757 • Lambertville, NJ 08530
609-397-1611 • Fax 609-397-5724

CIRCLE 417 ON READER SERVICE CARD

If you want MacroMind® Director presentations that are easy to produce and right

On Target then you need:

IllusionArt™
Clip Animation Volume 1

Templates, backgrounds, animations & instructions

Information: **\$95** to: IllusionArt
(510) 839-9580 P.O. Box 21398
Oakland CA 94611

CIRCLE 411 ON READER SERVICE CARD

CLIP ART
100 IMAGES
EPS OR PICT FORMAT
\$55.00

DESIGNED FOR NEWSLETTERS AND GENERAL ADVERTISING

908-530-5959
TS GRAPHICS
108 Shrewsbury Ave., Dept. W, Red Bank, NJ 07701

Reach your audience
when it counts.

Catalog readers are
ready to buy!

The Bottom Line

There's no easier,
faster, or more
economical way to
get your message in
front of 435,000
buyers than to
advertise in
The Macworld Shopper.

Call
800.888.8622
to reserve
your space
today!

For your ad to appear in The Macworld Shopper, call 800.888.8622

CATALOG

Communications

Get UUCP on your Mac with uAccessLite for Only \$195

- Tap into the worldwide network USENET - Send, receive, forward mail/news globally - Use with System 7 - Set up environment quickly and easily - Build a UUCP network - Plus much more!

Call 413/586-6896 today and order UUCP for your Mac!

GRIFFIN Software Systems Technologies, Inc. 2420 Via Carrillo Palos Verdes CA 90274

CIRCLE 432 ON READER SERVICE CARD

Educational

Grade Machine™

Gives you FAST full-screen editing of grades, weighted assignments & categories. Style sheets help customize reports. Each class file holds 250 students, 250 assignments, and 6 grading periods. Money-back guarantee. NOT copy-protected. Only \$79 + \$5 S & H. Previous version reviewed 9/90 Macworld (p. 287). System 7 & AppleTalk compatible.
Misty City Software, Dept. MW2
10921 129th Place N. E.
Kirkland, WA 98033
206/828-3107 Phone/Fax

TeleFinder™

Group Edition BBS
The Bulletin Board System for business. "The most useful BBS that we have seen" MacUser 7/90(UK). Multi-user, E-mail, file transfer, message threading, find file, and con interface. System 7 savvy. Just \$425.95 or unlimited users. Call for free demo!

NetConnect™ Hayes compatible AppleTalk BBS™ extension. \$149.95.

TeleFinder Pro icon interface terminal program with built-in mini host, scripting and ZMODEM. \$79.95.

Spider Island Software
4790 Irvine Blvd #105-347 Irvine, CA 92720
tel (714)669-9260 fax (714)669-1383
bbs (714)730-5785

CIRCLE 576 ON READER SERVICE CARD

Educational

Macの日本語はクオリタスにお任せ下さい
Qualitas is your Japanese Resource!

お知らせ!!

SOLO Writer

The Berkeley Hills firestorm on October 20th burned our office to the ground, but we are alive and well in a new location.

EGWord

To our existing customers:

Please send us the names and serial numbers of your products.

Our newly expanded product line offers the finest in Japanese-related software — language-learning programs, academic tools, DTP and graphics applications, new Japanese PostScript™ fonts and more.

Please
call for a
product
catalog.

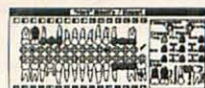


Qualitas Trading Company

2 Theatre Square, Orinda, CA 94563-3041
phone: (510) 848-8080 fax: (510) 253-1047

CIRCLE 436 ON READER SERVICE CARD

Dental



ToothPics®

Outperforms All Other
Dental Management Software
On The Market!

Dental Charts • Billing Systems
Insurance Claims • Business Reports
Multi-Color Walkout Statements

Charging Only at \$1295
Charging • Billing Starts at \$1995
Expandable to Match Business Growth

DENTALK

8335 Allison Pointe Trail • Suite 350 • Indianapolis, IN 46250
Phone (317) 579-5700 Fax (317) 579-5901

CIRCLE 456 ON READER SERVICE CARD

THE ABSOLUTE BEST IN TESTING!

LXR-TEST™ 4.1 is the most advanced and complete testing system available for your Mac!

• Item banking • Character styling w/tabs
• Test generation • Full graphic placement
• Scoring & analysis • Database selection
• Paper & interactive • Compatible gradebooks
• Mark reader support • Student mastery
• Commercial banks • Spelling checker

Highest rated software available in various editions to match your testing needs. Fully guaranteed! Pricing from \$149. For complete brochure & free preview disk; call, write, or fax:

Logic eXtension Resources
9651-C Business Center Drive
Rancho Cucamonga, CA 91730
(714) 980-0046 Fax: (714) 987-8706

CIRCLE 407 ON READER SERVICE CARD

Introducing:

Auto Scheduler®

For comprehensive league and sports
competition scheduling
For the Apple Macintosh™

From: Amalgamated SoftWorks, Ltd.

1600 - 18th Ave. N.E.
P.O. Box 18084
Minneapolis, MN 55418

- Schedule Multiple Leagues without conflict
- Multiple Fields/Courts or Facilities
- Will handle simple league formats to the most complex - limited only by disk space

Offering Automated Processing Of:

- Game Scheduling
- Round Robin and Tournaments
- Track Game Results
- League Standings AND MORE!

Visa/Mastercard & Checks accepted.

Auto Scheduler® will work for
ANY SPORT!

Comes with Full Manual, tutorial &
free unlimited telephone support.

☎ Call: (612) 649-4481 for info or to order

- Volleyball Statistics Management -
Now Available
Call or write for brochure today!

CIRCLE 429 ON READER SERVICE CARD

Continued...

Gregg Sanderson,

"The Macworld Catalog...to put it simply, it works"

Breakthrough Productions

For your ad to appear in The Macworld Shopper, call 800.888.8622

CATALOG

Educational

MORE TEACHING, LESS PAPERWORK - SAVE \$145

ClassMaster

Enter student profiles, grades, & attendance. Graph class & student performance. Print reports. Import/export data.

1991 Technology & Learning Mag. Award of Excellence.

"...one of the most impressive classroom management programs that we've seen."

Electronic Learning 5-6/91

MakeTest®

Store questions. Print tests, answer keys quickly. Include graphics, equations. Hand-pick or randomly select questions. Preview tests.

"...best way I have seen to store and categorize test questions." Macworld 9/90

1-800-669-6574

Plan to Teach

Create long-range, weekly, & individual lesson plans. Make seating charts. Includes 2 free books on effective teaching.

New Year Special till 1/31/92: All 3 for \$199 (\$145 savings)

Money-back guarantee

Toll-free support



MOUNTAIN LAKE
SOFTWARE, INC.

Tel: 415-752-6515 • Fax: 415-752-6506 • 298 4th Ave. #401, San Francisco, CA 94118

CIRCLE 478 ON READER SERVICE CARD

What's Wrong with Me?

- A teaching medical diagnostic tool for all ages.
- Reaches a reasonable diagnosis.
- Mirrors a physician's diagnostic talents.
- Learn about diseases and their findings.
- 1000 symptoms, 500 diseases, and 250 illustrations.
- Written by an emergency MD.
- Free Factsheet
- Act now, receive free, expanded version 2.0 soon!



\$115 (shipping and taxes included).

ComputerMed

7777 Fay Avenue, Suite K-268
La Jolla, CA 92037 (619) 454-3755

CIRCLE 552 ON READER SERVICE CARD

"We've reaped enormous benefits from our ad in The Macworld Catalog."

Greg Pillon
Vice President/Sales
The Mac Store

Engineering

Printed Circuit Board Design.

Protel's professional PCB design systems conform fully to Mac® human interface guidelines yet provide all the capabilities found in our popular "PC" versions, proven by thousands of designers around the world.

With user-definable Metric and Imperial snap grids. All dimensions are displayed in the selected measurement system. System resolution is 1 mil (.001 inch or 0.25 mm). Includes support for all Mac® compatible devices including high resolution imagesetters, pen plotters, Gerber® photoplotters and N/C drill file. 30 day money-back guarantee.

Easytrax™\$395.00

Stand-alone PCB layout system for through-hole designs, with pad-to-pad autorouter. Includes component library. Autotrax™\$595.00

Netlist import from DesignWorks™ and other schematic capture packages. Auto component loading, pad-to-pad autorouter and design rule checking. Full SMD support. User-definable tracks, pads, vias, etc. Global editing.

Autotrax Extended\$1495.00

All standard version features, plus full auto component placement and auto-routing capabilities.

Protel Technology Inc.

151 Bernal Road
San Jose, CA 95119
Call for FREE demopak.
(800) 544-4186

CIRCLE 592 ON READER SERVICE CARD

CIVIL • STRUCTURAL • SURVEYING •

NEW! LANDview™ for CONTOURING & TERRAIN MODELING

LANDesign™

COGO/Surveying

- Data Collector and Export
- Modules available
- From US\$595 + shipping

FRAME mac™

Structural Analysis

- Frames, trusses, beams
- Full graphics
- US\$595 + shipping

Money-back guarantee. Free support.

Other programs and products:

- Deed plotting
- Beam sizing
- Road design
- Section tables
- Structural design
- Structural properties

For free catalog or info: tel: (416) 738-4601

COMPUngeering fax: (416) 738-5207

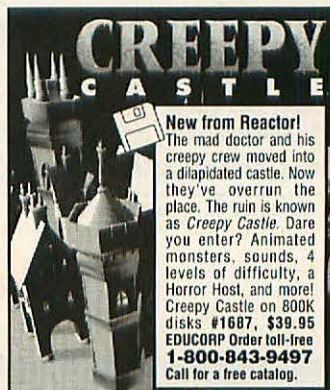
113 McCabe Crescent

Thornhill, Ontario L4J 2S6

CANADA

CIRCLE 503 ON READER SERVICE CARD

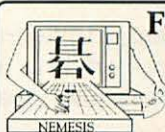
Entertainment



CIRCLE 408 ON READER SERVICE CARD



CIRCLE 572 ON READER SERVICE CARD



For the Businessman on the "Go!"

"Learning to play Go well is tantamount to a senior-level course in strategic thinking."

United Feature Syndicate 12/12/90

"[Go Junior] Best introduction to Go yet developed." MacWorld 2/91

Exhibiting in Merisel Booth

(800) TOYOGO-9

(808) 396-4126 fax

\$35 Go Junior \$69 Go Master \$139 Deluxe Toolkit + \$6.50 S&H

CIRCLE 440 ON READER SERVICE CARD



\$49
2 disks

Bird Songs!

Enhance your Macintosh workstation with the sounds of real birds that sing in the background. These professionally digitized bird-songs are played at random or by menu selection, and do not interfere with the foreground application. Forty songs are included in this two-disk set. A hard disk drive is required.

Dial 505-897-4024 Visa-MC

Corrales Software

POB 2730 Corrales NM 87048

CIRCLE 434 ON READER SERVICE CARD

Blackjack Tutor

"Don't just play lucky, play smart too!"

The ultimate Mac Blackjack software can show you how to turn the odds in your favor:

- Build confidence, experience, and skills by simulating virtually any casino BJ game
- Simple, step-by-step approach to card counting unravels the mystery and unleashes the power into your game
- Practice play, wager, and card-count techniques before entering a casino
- Fine-tune strategies by measuring performance over millions of hands

\$99.00+\$3.00 SH - Call for free brochure

30 Day Money-Back Guarantee

InSite Systems

P.O. Box 17791

Raleigh, NC 27619-7791

919 - 554 - 4736

CIRCLE 435 ON READER SERVICE CARD

Se
Habla
Macworld
Shopper?

For your ad to appear in The Macworld Shopper, call 800.888.8622

CATALOG

CD-ROM

We'll meet or beat any advertised price on CD-ROM products.

EDUCORP 1-800-843-9497



Call for a
**FREE 384-page
Software
Encyclopedia!**
A \$4.95 value.

NEC CD-Gallery as low as \$499 (7 CDs & NEC drive)

Get the Illustrated Encyclopedia, TimeTable, World Atlas, Beethoven's 9th, Cosmic Osmo, Desert Storm, & Cinderella (Discs) bundled with the NEC Intersect CDR-36 #C1977 for only \$499, or bundled with the Intersect CDR 73 #D1978 for only \$769.

These new NEC bundles include hardware, driver software, cables, amplified stereo speakers, headphones, and educational interactive CD software titles. Take advantage of these special savings today!



NEC 11 CD-ROM Drive Bundle

Get the Illustrated Encyclopedia, Time Table, World Atlas, Shakespeare, Sherlock Holmes, Birds of America, Mammals, Beethoven's 9th, Cosmic Osmo, Desert Storm, & Cinderella (Discs) bundled with the NEC Intersect CDR-36 #D1977, for only \$575, or bundled with the Intersect CDR 73 #E1978, for only \$849.



Bonus
2 FREE CDs!

Buy 2 other CDs with any drive bundle on your 1st order and get Classroom & World FactBook FREE. A value of \$200. Quantities limited. Use code #D2.



1 FREE CD
Buy any CD-ROM drive and get the EDUCORP CD Sampler free. \$9.95 value.

CD-ROM Drives

Your choice of cable, FREE! All drives come complete with driver software and cable. Specify #982 SCSI to SCSI or #981 Mac to SCSI cable. The EDUCORP CD Sampler is shipped free with every drive purchase.

- 1981 CD-Technology Porta Drive: 325ms/64K buffer. Multimedia HANDDisc included free with purchase\$599
- 1937 Toshiba XM3301: 325ms/64K buffer 699
- 1931 Chiconi CDA-431: 350ms/32K buffer\$579
- EDUCORP CD 2.0 included free.....\$79
- 1978 NEC CDR-73: 300ms/64K buffer.....\$79
- 1977 NEC CDR-36: 500ms/64K buffer.....\$479

NEC Intersect CDR-73 Bundle

- B1978 NEC CDR-73 w/Type Gallery PS.....729
- C1978 NEC CDR-73 w/Type Gallery PS, Clip Art 3-D, and Image Gallery.....1200

NEC Intersect CDR-36 Bundle

- B1977 NEC CDR-36 w/Type Gallery PS479

CD-ROM Titles

Education

- 1590 Desert Storm.....\$33.00
- 1566 Dictionary of Living World.....199.00
- 1355 EcoDisc.....249.95
- 1691 FindIt Webster w/Pronunciation.....69.95
- 1605 Japanese for Everyone.....279.00
- 1261 Learn to Speak Spanish v1.....79.95
- 1204 Learn to Speak French v1.....79.95
- 1570 LifeSaver: Learn first aid.....99.00
- 1361 Lingua-ROM II.....599.00
- 1584 The Orient: Travel Encyclopedia.....149.00
- 1666 Peter Rabbit (Discs Books).....74.95
- 1626 Singa: Zimbabwe Encyclopedia.....74.95

Desktop Publishing

- 1625 Aquatic Art.....149.00
- 1567 Classic Art Business v.1.....349.00
- 1389 Desktop Publishing CD 2.0.....99.95
- 1587 Donatelli Portfolios: Lingerie.....129.95
- 1338 Image Club Art/Type Vendor.....59.95
- 1628 ImageCels: 1,100 seamless textures.399.00
- 1581 International Graphics Library.....299.00

- 1585 Ocean Imagery.....99.00
- 1594 Photos On Disk.....179.95
- 1653 Wraptures: 200 seamless textures.....95.00

Sound Effects/Music

- 1347 Beethoven's 9th.....79.95
- 1589 Brahms: A German Requiem.....55.00
- 1565 Grooves: Over 100 music tracks.....99.00
- 1354 Magic Flute: A 3-CD Set.....55.00
- 1582 Sound/FX: Over 225 sound effects.....199.00

Entertainment/Consumer

- 1339 Cosmic Osmo.....59.95
- 1818 EDUCORP CD Sampler:.....9.95
- 1327 Exotica-ROM 2.0.....199.00
- 1803 Verbum Interactive.....49.95
- 1381 Virtual Valerie.....79.95
- 1583 Spaceship Warlock.....69.95

Shareware CD-ROMs

- 1610 ClassROOM.....49.95
- 1300 EDUCORP CD-ROM 6.0: 1 gigabyte 199.00
- 1611 GameROOM*: over 750 games.....49.95
- 1609 Sound Machine*: 450 Mac sounds.....49.95

*Indicates software is contained on #1300

Over 200 titles in stock!

7 CDs with any drive purchase for only \$199.

#1599. Offer valid only with the purchase of a CD-ROM drive. Save over \$720!



Mammals
Retail \$79.95.



Illustrated Encyclopedia
Retail \$395.



World Atlas
Retail \$79.95



Time Table of Science
Retail \$129.



Shakespeare on Disc
Retail \$79.95.



Sherlock Holmes
Retail \$79.95.



Birds of America
Retail \$79.95.

800K disks as low as \$4.99 each

Individual disks only \$6.99 ea. Buy 5 for \$5.99 ea, or buy 10+ for \$4.99 ea.

4414 MacConcept

3D graphics program.

2129 ResEdit/CICN Editor

Edit and manipulate all resources, from icons and dialog boxes to menus.

2128 Essential INITs

Contains MacPassword Demo for security and virus protection, INIT CDEV, SCSI Probe 3.0.

4601 SoundMaster 1.6.4

Control all Mac sounds: startup, restart, shutdown, and more! Works with System 7.

4043 Startup Screens

29 terrific startup screens.



Shareware Disks

5-disk sets \$24.95 each

1706 System 7 Tools- NEW!

7 True Type fonts, utilities, 80 color icons, SCSI Probe, ResCompare, INITLoader, more!

1151 Best of Games v.1

31 fun games.

1224 Best of EPS Clip Art

100 high resolution EPS pictures.

1155 Best of Education v.1

60 of our best educational programs.

1709 Type 1 Fonts Set

40 Adobe Type Mgr compatible Type 1 fonts.

HOT!

The New SwimSuit CD-ROM

Over 200 model-released photos of beautiful women in the latest swimwear. Create sizzling ads, flyers, and publications with these eye-catching color images photographed in exotic locations. #1595, \$199



EDUCORP® 1-800-843-9497

See us at the
San Francisco
MACWORLD Expo.
Booth #1507

7434 Trade Street • San Diego, CA 92121 • Orders: 800-843-9497 • Info: 619-536-9999 • FAX: 619-536-2345

CIRCLE 413 ON READER SERVICE CARD

For your ad to appear in The Macworld Shopper, call 800.888.8622

CATALOG

Fonts

FONTagenix™ 4 Vol. of bitmap display/text fonts
ARTagenix™ 5 Vol. of graphics including:
 Floral, Child Art, Military Aircraft in bitmap images
LASERgenix™ 6 Vol. of downloadable LASER
 fonts: Cyrillic, E. European, Text, Cookbook, Fractions, Others
Only \$39.50 per volume

Foreign Fonts Edition™
 22 foreign language bitmap fonts **\$69.50**

Devonian International Software Company

P.O. Box 2351 • Montclair, CA 91763
 (714) 621-0973 • Fax (714) 621-2117
 All orders add \$5 s/h. CA Residents add 8.25% tax
 VISA/MC/Check/Money orders Accepted
 Dealer/Distributor Inquiries Welcome

CIRCLE 526 ON READER SERVICE CARD

PRECISION TYPE

17 MALL DRIVE
 COMMACK, NY 11725

5 1 6 • 8 6 4 • 0 1 6 7
 1 • 8 0 0 • 2 4 8 • 3 6 6 8

AUTHORIZED DEALER FOR:

ADOBE LETRASET
 AGFA LINGUIST
 ALTSYS LINOTYPE
 BEAR ROCK MONOTYPE
 BITSTREAM PAGE STUDIO
 BRODERBUND THE FONT CO.
 CASADY & GREENE TREACYNES
 IMAGE CLUB ...AND OTHERS
 LANSTON PLUS CD-ROMS

OVER 10,000
fonts



CIRCLE 485 ON READER SERVICE CARD

FIND
 YOUR
 ROOTS

in
 The
**Macworld
 Shopper**

Genealogy

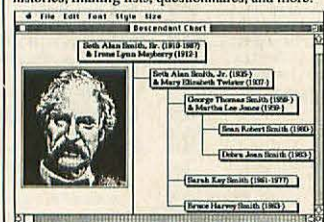
Family Heritage File™

Most powerful and easy genealogy program on Mac. Rated "BEST" by Macworld. Designed by genealogy professionals. •Enhanced •Fully Relational
 •Graphic Pedigree, Family Group, Individual, Marriage, Surname •Unlimited History •Sorted Lists •Export to WP/data base/modem. New Jewish version. \$149 + 5 s/h. Demo \$7. Visa/MC. Free Lit Pak. Call for special San Francisco Expo bundle.

StarCom Microsystems
 Windsor Park East
 25 West 1480 North
 Orem, UT 84057
801/225-1480

REUNION the family tree software

Reunion quickly records and links family tree information. Version 3.0 calculates relationships, supports hi-res color and grayscale images, creates large graphic charts, family group records, family histories, mailing lists, questionnaires, and more.



Call, write, or FAX for brochure & sample printouts.
LEISTER PRODUCTIONS
 14 Hill Blvd., Mechanicsburg, PA 17055
 717-697-1378 — FAX 717-697-4373

Family Roots™

Do it YOUR way! Huge variety and capacity for your family history. Make pedigree charts, descendants charts, person sheets, group sheets, indices and much more. Customize to your own preferences. Standard Mac interface Call for FREE information. Satisfaction guaranteed MC/Visa/AE.
 Quinsept
 Box 216
 Lexington MA 02173
617/641-2930
800/637-ROOT

Graphics

Paint at That - New Product

- 32-bit full color and Quick Draw compatible with 1.67 million colors
- Special effects and features - flip, free rotate, skew, stretch, bend, label and more with selected color and area editing
- Color brightness and transparency control
- Multiple window function
- Can create your own color palette
- Bolt On Tool through interface spec and source codes provided for you to create the tool
- Prints on Mac compatible printers include many color printers and LaserWriter

All these for only \$99.95

Published by Threes Company, Inc., Tokyo, Japan (a major developer, distributor, & dealer for Mac)
 Distributed by Soft World Corp.
 1315 Lori Ln. Rosemead, CA 91770
 Tel (818) 288-4287 Fax (818) 280-3945
Dealer inquiries are welcome

CIRCLE 525 ON READER SERVICE CARD

Stock
UP

with



The
 Macworld Catalog

Graphics Translators

CADMOVER®

REAL WORLD
 GRAPHIC TRANSLATOR



Kandu Software Corp. 703-532-0217

CIRCLE 549 ON READER SERVICE CARD

METAPICT

VECTOR & RASTER
 GRAPHICS TRANSLATOR

VAX & IBM
 PC GRAPHICS SOFTWARE
 HARVARD GRAPHICS
 LOTUS FREELANCE
 COREL DRAW
 SUN WORKSTATIONS
 GENGRAPHICS
 AUTOGRAPHICS

\$179.00 + S/H 30 DAY MBL
GSC ASSOCIATES, Inc.
 Tel (310) 379-2111
 Fax (310) 379-1649

CIRCLE 443 ON READER SERVICE CARD

Wherever the
 market goes,
 Macworld is
 there first!

For your ad to appear in The Macworld Shopper, call 800.888.8622

CATALOG

HyperCard Stacks

MacFlash Cards



**Effective
Expandable
Affordable**

**Vocabulary tools for all
Macintosh computers:**

**French German
Russian Spanish
Latin Czech**

Over 2000 foreign words and
1000 more foreign synonyms.
Only \$25 each. Compare our prices
and save! **ORDER TODAY!**

Cyrillic and Czech fonts available!
Call or write for more information:
The Language Quest Software Co.
101 First Street, Suite 428
Los Altos, CA 94022
00-622-3574 or 415-949-2876

CIRCLE 451 ON READER SERVICE CARD

Import/Export

INTERNATIONAL EXPORT/SALES

SPECIALISTS IN MAC. SOFTWARE & HARDWARE

**Reliable
Fast and Professional Service
EMC/Agent/Representative Service**

PACIFIC DEMAND INC.
533 Howard St. S.F. CA 94105
EL:(415) 512-7790 FAX:(415) 512-9345

CIRCLE 540 ON READER SERVICE CARD

Languages

FORTTRAN on Your Desktop

No need to wait for time on the "big" computer any longer. Language Systems FORTRAN lets you run the same high performance FORTRAN programs at your desk. Full integration with System 7, VAX-compatible extensions, built-in user interface, automatic backgrounding, and direct code generation for the Mac II family make this compiler the most powerful FORTRAN for the Mac. **Language Systems Corp.**
441 Carlisle Drive
Herndon, VA 22070-4802
703/478-0181
703/689-9593 Fax

MACTRAN PLUS Ver. 4.0

Integrated Made-for-Mac Development System. Includes: Editor, Optimizing Compiler, Source level Debugger, Linker, Library Manager, Profiler and Build facility. Supports 68020/030 & 68881/2 native code. Significant Vax Fortran & ANSI 8x extensions. High & Low level tool box interface. Unlimited code segment size.
DCM Data Products,
610 One Tandy Center
Fort Worth, TX 76102
817/870-2202
817/336-2416 Fax

Legal

Living Trusts

Preserve your estate (or that of your parents) with **LivingTrustBuilder™**—a collection of formatted text files in MacWrite™ and WORD™. Now you'll have the tools to protect your inheritance, reduce tax liabilities and minimize legal complications.

LivingTrustBuilder includes sample documents for a Married Trust (with or without A-B provisions), Individual/Single Trust, and Minor Trust. Supporting documents include a Quit Claim Deed, Grant Deed, Durable Power of Attorney (health care / property), Living Will, Statement of Intentions, Pour Over Wills, and more.

LivingTrustBuilder also includes the 224-page book: "Understanding Living Trusts" by Jim and Vickie Schumacher. It fully explains common myths and describes concepts of trusts / wills, advantages / disadvantages, how to fund your trust, pitfalls to avoid, tax consequences, etc. — in plain English! Prepared by a legal team with over 1,500 trusts behind them. Save \$\$\$! v. 2.0 \$139 +s/h

Call today toll-free to order:
1-800-346-5426 toll-free
415/ 941-9191 worldwide
MC-Visa-Amex 30-Day Guarantee

CIRCLE 437 ON READER SERVICE CARD

Medical

MacAnatomy™ MacSurgery™

...an electronic atlas of Anatomy in 4 vol. on disk in MacPaint™ format. Easily altered & copied to any program via the clipboard. Ideal for students of Anatomy in all the health & legal professions. ...is a HyperCard™ stack w/multi-choice quest & ans. Detailed discussions & documentations are provided. Ideal for continuing education & board prep.
MacMedic Publications
5805 Westheimer
Houston, TX 77057
713/977-2655
800/477-0717
713/784-3759 Fax

CareTracker™

•Patient Care Support System•
\$489 comprehensive package featuring a robust clinical database, powerful search and report, progress notes, Artificial Intelligence for "due" status and drug interactions, flow sheets, problem lists, decision analysis, remote modem access, medical literature database and much more. Highly intuitive. Computerize your PRACTICE, not just your office.
Med4th™ Systems
716 East Carlisle Avenue
Milwaukee, WI 53217
414/963-1985 Voice/Fax

Medical Office Mgmt.

TessSystem™ software for insurance and billing. Our \$1295 package out-performs software selling at three times that price. Expandable line to grow with your needs. Call for product literature and DEMO software today! New modules include electronic claims and multi-user for Mac networks.
Wabash Medical Resources, Inc.
8335 Allison Pointe Trail, Suite 310
Indianapolis, IN 46250
317/579-5900

**Medical
and
Dental
Billing**



**Special Sale Price
NOW Available!**

Insurance Claim Forms
Electronic Claim Files
Private Patient Billing
Patient Charts/Treatment Plans
Appointments (Reminder & Recall)

CMA Micro Computer
 53885 Yucca Trail
 P.O. Box 2080
 Yucca Valley,
 CA 92286-2080

**Call Today
at (619)363-9718**




CIRCLE 446 ON READER SERVICE CARD

Music/MIDI

VERSION 2.3

**PRACTICA
MUSICA**



Ear
Training
and
Music
Theory
for
Everyone

—MacUser Magazine, August 1990

•Teaches intervals, chords, melody, rhythm
 •Interactive staff notation •Saves scores
 •High quality sound •MIDI compatible
 •Historical & computer-generated melodies
 •Custom ear training melodies
 •Includes textbook •Beginners to advanced

\$125.00 • Call Toll Free 800-445-4866

ARS NOVA
 BOX 637, KIRKLAND, WA 98083

CIRCLE 489 ON READER SERVICE CARD

Continued...

For your ad to appear in The Macworld Shopper, call 800.888.8622

CATALOG

Music/MIDI

Call Now! **DIGITAL**
Hard Disk Recording • DAT • Macintosh • MIDI Instruments
Coda • Mark of the Unicorn • Passport • Dr. T's • Opcode
Digidesign • Roland • J.L. Cooper and more

FREE CATALOG **800-MAC-BEAT**
505-473-4929 *Mac BEAT*

CIRCLE 433 ON READER SERVICE CARD

Compose yourself **\$99-** Interactive Learning Software
Complete "How To" Composing Package
8 Track Sequencer • Chord Computer • Composer Strategies HyperCard
Stack • Cassette Tape • Complete Composition Manual • Call for Details

800-MAC-BEAT
505-473-4929 FAX 505-473-4647 *Mac BEAT*

CIRCLE 438 ON READER SERVICE CARD

Computers & Music



Confused about MIDI and music software?
We aren't.

800-767-6161

CIRCLE 553 ON READER SERVICE CARD

Sound Design
Composition
Educational
Sampling
Notation
Multimedia
Sequencing
Digital Audio

Lowest Prices
Free Catalog
Est. 1982

647 MISSION ST.
SAN FRANCISCO, CA

Programming Tools

NEW!!
68000, COP800, PIC16Cxx
versions!

μASM™ Cross Assemblers
for the Macintosh™

•TEXT EDITOR, CROSSMACRO ASSEMBLER, AND
COMMUNICATIONS FACILITY IN A COMPLETE
INTEGRATED DEVELOPMENT ENVIRONMENT
•S OR HEX FILE OUTPUT DOWNLOADS
TO MOST EPROM PROGRAMMERS **\$149.95 ea**
plus S/H*

AVAILABLE FOR MOST 8-BIT MICROPROCESSORS AND
68000/010. CALL OR WRITE FOR TECHNICAL BULLETIN.
30 DAY MONEY BACK GUARANTEE. MC/V/AE.

Micro Dialects, Inc.
DEPT. MW, PO BOX 30014
CINCINNATI, OH 45230
(513) 271-9100

CIRCLE 416 ON READER SERVICE CARD

Property Management

Property Management

Comprehensive software for managing
residential, commercial properties and
condo associations. Includes check
writing, recurring expenses, financial
statements, complete management
reporting and a full general ledger for
\$1,195.

Yardi Systems, Inc.
813 Reddick St.
Santa Barbara, CA 93103
805/966-3666

Mac Landlord \$399

Easiest-to-use property management
software for all types of properties.
Designed by property managers. Include
recurring income and expenses,
maintenance records, check writing,
account balancing, and printing tenant
notices. For single or multiple properties.
Three levels of passwords. Full menu of
management reports. Demo \$25 credits
to purchase.

Labana Management Company
P.O. Box 2037
Dearborn, MI 48123
313/562-6247

Nutrition

MacDiet™ 1.0 on CD-ROM

HyperCard® based dietary planning
system. Incl. recipe & menu analyzer,
data entry & import facility, RDA tables,
spreadsheet, weekly planning calendar,
help system, nutrient almanac, USDA
database, & user guide. Pro or private
use. Mac® (processor > 68000).
\$495 + CA tax. 40% educ. discount to
institutional purchasers. Site licenses.
1 free database upgrade. Month of
Jan'92 expo special, \$150 off reg. price.
Raymond Software, Inc.
347 Massol Avenue, Suite 105
Los Gatos, CA 95030
408/ 395-6157

Introducing MacDINE® Perfect

Shed those unwanted holiday pounds and
improve your nutrition and health at the
same time!

- Analyzes your meals, recipes and activities
- Features a \$656 food expandable
database with 24 food components
- Includes brand name and fast foods
- Users manual
- \$149 plus \$7.95 shipping
- ***Satisfaction Guaranteed***
- DINE Systems, Inc.**
586 North French Road, Suite 2
Amherst, NY 14228
716/688-2492
716/688-2505 Fax

Direct Response.
Direct Results.
The Macworld Shopper

**"Macworld
has been
most critical
in our growth
since start-up.
And that's
why we're
upgrading
our
advertising
in
Macworld."**

Jack Fishman
Founder & President
MacBeat

**The
Macworld
Shopper
Your Best Buy**

For your ad to appear in The Macworld Shopper, call **800.888.8622**

CATALOG

Public Domain

• **FREE** •

**8 ASSORTED PACKAGES
OF OUR BESTSELLING
SOFTWARE FOR MAC®**

1. GAMES
2. EDUCATION
3. HYPERCARD
4. BUSINESS
5. RELIGION
6. FONTS
7. CLIP ART
8. UTILITIES

**PAY ONLY \$5.00 SHIPPING
• CREDIT CARDS ONLY •
EACH PACKAGE CONTAINS
6/3.5" DISKS**

**SMC
SOFTWARE PUBLISHERS
619 931-8111
EXTENSION 511**

CIRCLE 466 ON READER SERVICE CARD

Religion

Church Data Master Plus
Now for

Macintosh or Windows 3.0
DM+ is the only comprehensive church
management program for either Mac or
Windows. Available as single modules or
integrated. Membership, Contributions
and Accounting. Priced from \$265. Full
featured demo available \$10.
Computer Helper Publishing
898 Cleveland Avenue
Columbus, OH 43231
600/533-5227
614/895-7071

Sales/Marketing

Sell More, Work Less!!!

MARKET MASTER AUTOMATES the sales
follow up you don't have time for and
keeps the contacts happening! More than
a mere contact manager, it's a SALES
LEAD HANDLER! You get unmatched
simplicity and maximum control. Versions
available for one rep or a whole sales
force! Six years on the market -
everything works. 30-Day money-back
guarantee. Demo Disk \$10.00.
Breakthrough Productions
210 Park Avenue
Nevada City, CA 95959
916/265-0911
916/265-8036 Fax

**NEW Power Designed
To Fit Your Needs**

MINITAB offers a broad range of
statistical functions, quick and
efficient menu interface, and
command option.

- Basic & Advanced • DOE
- Statistics • Data Editor
- Control Charts • Hi-Res
- for SPC Graphics

Mac models except 128k,
512k & 512e

CALL 800-448-3555

MINITAB
STATISTICAL SOFTWARE

Minitab Inc., 3081 Enterprise Drive,
State College, PA 16801-3008 USA

CIRCLE 450 ON READER SERVICE CARD

Scientific

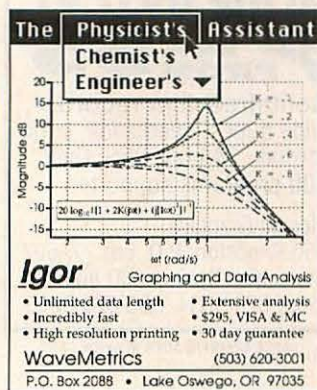


RockWare
Earth Science Software

4251 Kipling St., Ste. 595 • Wheat Ridge, CO 80033
(303) 423-5645 • FAX (303) 423-6171
RockFAX: (303) 423-7112
*New 24hr voice/fax product info line.

**FREE
SOFTWARE
CATALOG!**

Over 160
earth science
applications for the
Macintosh & PC!



CIRCLE 448 ON READER SERVICE CARD

Training

TRAINING

Master the
basics of
Photoshop
with an
easy and
powerful
self-paced
audio
tutorial.
2.0
or 1.0
version

**PHOTOSHOP
BASICS 1 & 2** **NEW**

Call
408.358.7793 \$79.95 ea.
16593 Fortis Ave., Los Gatos, CA 95032 + Shipping

CIRCLE 514 ON READER SERVICE CARD

Services

Computer Insurance

COMPUTER INSURANCE
PLUS

- Replacement with no depreciation
- Covers computer hardware in home or office
- Easy to read policy
- Bonus 20% for software coverage
- Low \$50 deductible
- Covers theft, fire, power surges, accidents, natural disasters, even earthquakes and flood
- Policy backed by an A+ company

COMPUTER INSURANCE
6150 Old Millersport Road, NE
Pleasantville, OH 43148
AGENCY, INC.

1-800-722-0385

CIRCLE 523 ON READER SERVICE CARD



SOFTWARE

**INSURES YOUR
COMPUTERS**

Full replacement of hardware, media,
purchased software. As low as
\$49 yearly. Covers fire, theft, power
surges, other accidents. Blanket
coverage; no list of equipment
needed. Call for information or
immediate coverage.

1-800-848-3469
Local (614) 262-0559

SAFEWARE, The Insurance Agency Inc.
2929 N. High Street, P.O. Box 02211
Columbus, OH 43202

CIRCLE 522 ON READER SERVICE CARD

Being in the

RED

Can put you
in the

BLACK

The Macworld Catalog
800.888.8622

For your ad to appear in The Macworld Shopper, call **800.888.8622**

CATALOG

Computer Repair

!!REPAIR BY MAIL

Real low cost, super fast turn-around.
Mac Plus, SE logic board swap \$225+ s/h;
1 yr. warranty. Plus and SE power sweep
swap as low as \$59+ s/h; 1 yr. warranty.
Drive repairs as low as \$35. Keyboard
repairs as low as \$12.50+ s/h. New and
used hardware for sale. School orders
welcome. Open 12 noon-5, 6:30-10pm
eastern M-Sat. We buy dead Apples,
Macs, PCs.
Arminius Pubs. & Prods. Inc.
P.O. Box 1265/8519 Orchard Ave.
Merchantville, NJ 08109
609/662-3420



BROKEN MACINTOSH?

LET US FIX IT FOR YOU!

- Analog Board Repair & Upgrade
- Logic Board Repair & Upgrade
- Lifetime Warranty (most repairs)
- Most Repairs in 24 Hours

Parts Available

Dealer Inquiries Invited

CALL US TODAY!

Orders (800)395-9322
Other Inquiries (206) 348-9322

CIRCLE 557 ON READER SERVICE CARD

Data Recovery



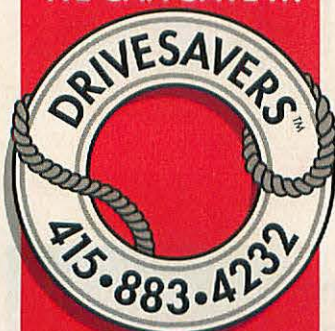
Computer Peripheral Repair & Recovery Services

"Data Crash! ... We're Going In!!"

7570 S. U.S. Hwy. 1, Suite 8 ~ Hypoluxo, FL. 33462
Ph. (407) 586-0011 ~ Fax (407) 582-7921

CIRCLE 452 ON READER SERVICE CARD

WE CAN SAVE IT!



- * Macintosh Data Recovery
- * Repair any Mac Hard Drive
- * Optical/SyQuest Recovery
- * Fast Nationwide Service

30-D Pamaron Way
Novato, CA 94949

CIRCLE 510 ON READER SERVICE CARD

Desktop Publishing

We Image

MAC
MAC
MAC
MACINTOSH
MACINTOSH
MACINTOSH ONLY
MACINTOSH ONLY

In NY State Call
212.989.2727
Outside NY State Call:
800.445.9002

**Nextwave
Productions
NYC, NY**

\$5 Non-PostScript \$10 PostScript
24-hr slides, 4K resolution (standard)
Volume discounts and rush available.

CIRCLE 488 ON READER SERVICE CARD

SLIDE OUTPUT Mac/PC FROM \$3

Solitaire® film recorder,
slide dupes, overheads, large
format. 24 hour BBS. Over
100 programs supported.

Elegant Graphics
750 Princeton, P.O. Box 774607
Steamboat Springs, CO 80477
(303) 879-4334, BBS 879-5210

CIRCLE 527 ON READER SERVICE CARD

Data Conversion

DATA CONVERSION

If you want the
most complete
conversion
services in the
industry, just
call...



(800) CONVERT

Capabilities
include over
3000 formats.

**PIVAR
COMPUTING SERVICES, inc.®**

165 Arlington Heights Rd. #MW
Buffalo Grove, IL 60089
(708) 459-6010

Thomas Armes,
President of
Elite
Computers &
Software says:

**"5 to 1 as
many sales.
Not leads,
sales!"**

"We're just
getting better
results from
Macworld.

We started
running in
all the Mac
publications,

but on a
budget, we're better
served by
Macworld.

We need a
catalog
environment. And

The
Macworld
Catalog
is where
we want
to be."

Steve Rowley,
President
DeskTop Direct

Laser Recharge

reconditioned **TONER** cartridges!
for laser printers & Canon PC Copiers

BETTER THAN NEW!
• 20% MORE TONER
• DARKER PRINT
• 100% GUARANTEED

From **\$44.95**

We buy empties
call for brochure
800-426-8196

Willow Products Corp.
3857 Willow Ave, Pgh, PA 15234

WILLOW

CIRCLE 445 ON READER SERVICE CARD

For your ad to appear in The Macworld Shopper, call **800.888.8622**

CATALOG

Accessories

Cases

MacFreighter

Deluxe ATA Cases

- Wholesale prices
- Sameday shipping
- Best cases for shipping or airline custom cases



Linebacker 1-800-228-7042

CIRCLE 442 ON READER SERVICE CARD

MacBag

Absolutely The BEST bag anywhere

- Best protection
- Best features
- Best design

Pack your
LC or SI
in seconds!



Holds LC or SI with 12" monitor, keyboard, mouse and cables.



WEST RIDGE DESIGNS

For a dealer near you call toll free

1-800-548-0053

1236 N.W. Flanders, Portland, OR 97209

CIRCLE 444 ON READER SERVICE CARD

DOUBLE CASE™

DOUBLE WALL PROTECTION



- Abundant Storage
- Easy to Carry
- Low Profile, 17" high
- Lightweight

At **\$129.95**
the DoubleCase
is the most affordable
HARD CASE
for the Macintosh

**AIRLINE CHECK-IN
APPROVED**

Call toll-free
1-800-475-0707
VISA and MasterCard

NOTEBOOK CASES TOO!

CIRCLE 449 ON READER SERVICE CARD

Formatted Diskettes

WITH FORMAT	QTY 250 MIX & MATCH	WITHOUT FORMAT
\$.44	5 25" DS/DD	\$.39
\$.66	5 25" DS/HD	\$.56
\$.63	3.50" DS/DD	\$.53
\$1.09	3.50" DS/HD	\$.99

- **FREE FORMATTING** on First Order
- **TYVEC SLEEVES** & Labels Included
- **COLORED MEDIA** Please Add \$.05
- **PRIVATE LABELING** Available
- **SAME DAY** Shipping
- **MONEY BACK GUARANTEE**

800-255-3142

Diversified Systems Group, Inc.
PO Box 1114, Issaquah WA 98027

CIRCLE 496 ON READER SERVICE CARD

**Increase
Your Reach,
Increase
Your Sales
and Hit
Your Market
in
The
Macworld
Shopper!**

Ultimate Protection!



PROTECTIVE REUSABLE CASES

for Apple, IBM, and any other computer system and/or peripheral

VISA **STAR CASE** AMERICAN EXPRESS OPTIMA

(800)822-STAR (800)782-CASE

CIRCLE 558 ON READER SERVICE CARD



A 50-YEAR
TRADITION

**ZERO
HALLIBURTON**

The Best Case Scenario
Airline Check-in or Local Use

Zero Halliburton Aluminum Mac Cases:
Lightweight, Durable, Distinctive Styling
PowerBook & Portable Attaches Classic/Plus/SE
IICx/ci IISI LC IIX/IX Monitor & Printer Cases

from \$299.95 1-800-542-4591
1-310-578-9710

TCC 13101 Wash. Blvd., #110, L.A. CA 90066

CIRCLE 403 ON READER SERVICE CARD

MacSac



Mac
PowerBook
Carrying
Cases

MacSac PowerBook, Classic,
SE, LC, Stylewriter, and others.

For a dealer nearest you call:

401-274-0595 or 1-800-343-3388

ComputerAid

A Division of Karen Ann MFG. Fall River, MA

CIRCLE 423 ON READER SERVICE CARD

For your ad to appear in The Macworld Shopper, call **800.888.8622**

CATALOG

Furniture

NEW!

"The Best Mac Desk Ever"

MacFriends 1991

- Ergonomic
- Space Saving
- Strong
- Many Configurations



AS LOW AS
\$199

FREE CATALOG! 800-688-2446

agio
BEAVERTON, OREGON
503-690-1444
FAX: 503-690-1444

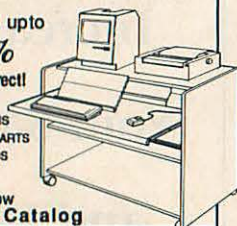
CIRCLE 402 ON READER SERVICE CARD

Furniture for the Macintosh

Nationally advertised fine oak furniture

Save up to
40%
factory direct!

- CAD-CAM WORKSTATIONS
- LASERWRITER CARTS
- PRINTER STANDS
- AND MORE...



Call Now
For Free Catalog

1-800-333-8095
The Walker Company Petaluma, CA
CIRCLE 543 ON READER SERVICE CARD

Supplies

DUST COVERS 100% **ComputerWear**

COTTON CANVAS

MAC, SE, II, & PRINTERS
Beige w/ Grey Trim Breathable! Static-Free!

NEW! Seal-Skins
For Keyboards

1-(800) 826-5761
Int'l: (415) 759-1466 Fax: (415) 564-0506
Contemporary ComputerWear 1320-36th San Francisco 94122

CIRCLE 507 ON READER SERVICE CARD

DUST COVERS

ALL FABRIC

- Heat Venting, will not become stiff or crack with age! • Easy to Use • Machine Wash & Dry!
- Highest Quality, Custom-Fit!
- All makes & models! • Custom colors! • Available in Gray, Tan, Navy, Royal, Red or Brown.
- 100% Satisfaction Guaranteed!
- Outstanding service since 1953!

11-55 Mac Classic & Keyboard	24.95	10-90 Mac SE or II Ext Keyboard	9.95
10-74 Mac SE & SII Keyboard	24.95	11-34 AppleColor IIPIII Printer	18.95
10-75 Mac SE & Ext Keyboard	24.95	11-23 Radius Pivot Monitor	24.95
11-55 Mac Ilii Computer Only	15.95	10-95 Radius TPD - 19"	24.95
11-55 Mac Ilii 13PIII Dr & Kbd	29.95	11-22 Super Mac 19" Cr Mtr	29.95
11-57 Mac Ilii 12" Mtr & Kbd	29.95	11-24 Apple Scanner	15.95
10-73 Mac II, Cr Mtr & Ext Kbd	29.95	10-37 ImageWriter II	15.95
11-62 Mac Ilii/IIlii CPU	19.95	10-90 LaserWriter II	24.95
11-61 Mac Ilii Computer Only	15.95	11-25 Personal LaserWriter	24.95
10-98 Mac Ilii, Cr Mtr & E Kbd	29.95	11-52 StyleWriter	15.95
11-55 Mac Ilii 13" FGD & Kbd	29.95	11-40 T.I. microLaser PS	19.95
11-52 Mac Ilii 12" Mtr & Kbd	29.95	SKIN Keyboard Skins	21.95

Add \$4.00 Shipping & Handling (Check, MO, COD, VISA/MC) *MW Spcl

CO-DU-CO Computer Dust Covers
1802 W. Wisconsin Ave., Milwaukee, WI 53208
800-735-1584 111-176-1581 • 176-9329 FAX

CIRCLE 455 ON READER SERVICE CARD

Did you know that:

- Over one-third of all Macworld subscribers do not read any other Macintosh-specific publication?

- The average Macworld subscriber has used a personal computer for over 6 years?

- Macworld subscribers hold high level positions in their organizations and more than 80% are active participants in the purchase of computers and third-party products?

- Macworld subscribers give purchase advice to an average of 18 people per month?

Source: 1990 Macworld Subscriber Study

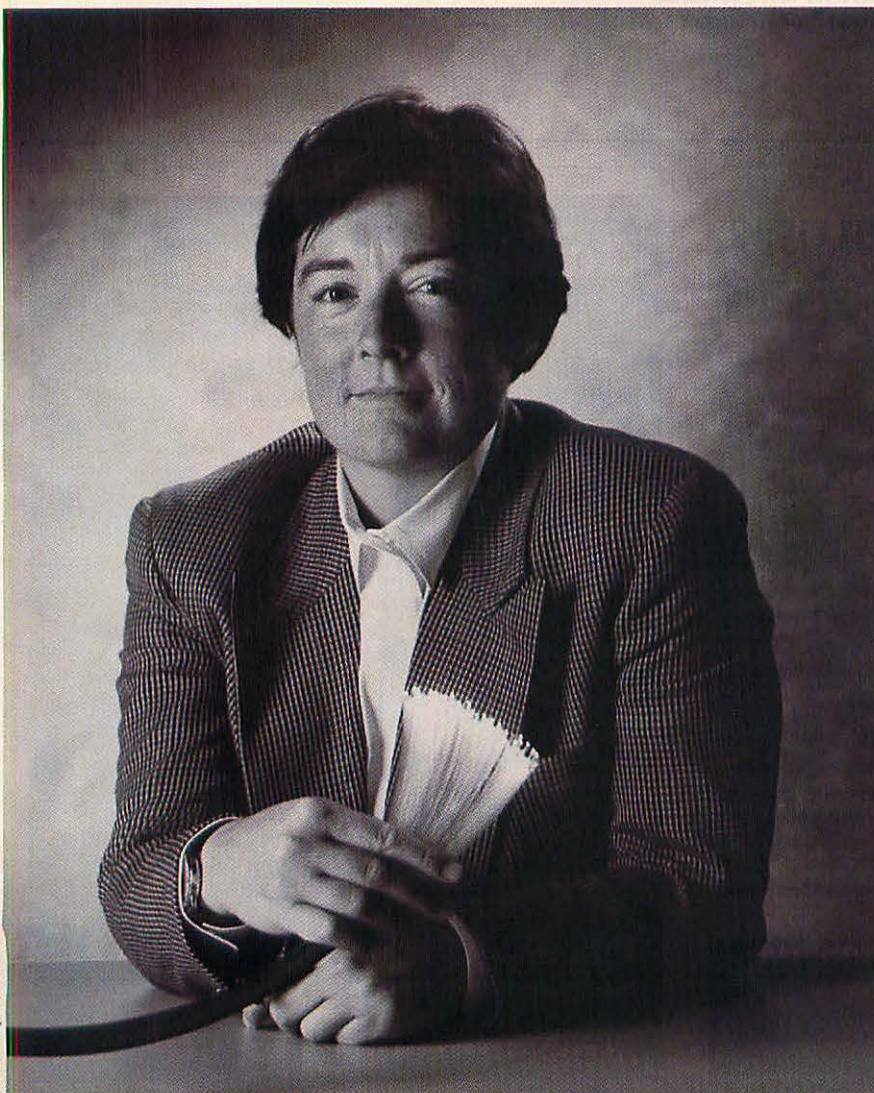
Gerry Schaefer says,

"The new, expanded Macworld Shopper is where the real sales action is."

National Sales Manager,
Co-Du-Co

For your ad to appear in The Macworld Shopper, call **800.888.8622**

Some people put the homeless out of their minds. Christine Vigil put them on-line.



In 1906 St. Vincent de Paul was founded to help people left homeless by the San Francisco Earthquake. Today, they're an organization that helps thousands of homeless people nationwide. By finding them shelter, medical care, rehabilitation, and jobs.

That's where Christine came in. Before she got involved, St. Vincent de Paul worked with 75 other San Francisco social service agencies matching homeless people with available jobs. The Job Finders Alliance worked hard, but since they only communicated by memo and phone, it could take up to three weeks to match a qualified person with an open job.

By using her computer skills, Christine was able to put St. Vincent's on-line, and make the whole process more efficient. As a direct result of her efforts, today St. Vincent's has been able to find jobs for their people far more rapidly. And make better matches, because they have access to a comprehensive database.

Of course Christine is just one example. There are a lot of ways you can put your special computer skills to a much appreciated use, whether you specialize in telecommunications, system debugging, or basic software training. To know more, call CompuMentor™ at 1-800-659-3579. We'll put you in touch with a local non-profit organization whose needs are compatible with your area of expertise.

There are many ways to make a difference in the world. Sometimes it's simply doing what you already do best.

CompuMentor™

People helping computers help people.

89 Stillman Street, San Francisco, CA 94107

MACWORLD

PRODUCT LAUNCH

SECTION

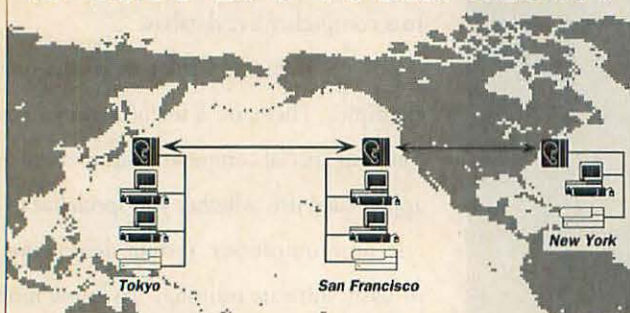
Turn to the Product Launch Section of Macworld for information on the new products in the Macintosh industry.

This is the premiere showcase for new product launches or relaunches. Look to the Macworld Product Launch section—your source for the newest Macintosh products.

Call your account executive for more details on advertising in the Macworld Product Launch section!

(415) 243-0505

IS 9600 BPS TOO... SLOW?



SyncRouter LT connects LANs up to **6 times** faster than analog modems. Use Leased Digital Lines, **SW56**, **ISDN** or **Fractional T1** to make fast, reliable connections. **SyncRouter LT** connects network directly to digital phone jack. **SyncRouter LTz** offers zone cloaking capability for added security.

SyncRouter is the remote AppleTalk network solution for: multiuser databases, resource sharing in education, corporate communications, large graphic file transfers, E-mail and more. *Go digital all the way* and get the bandwidth you're paying for!

Call today for information on SyncRouter products and digital services — and come visit us at the **San Francisco MacWorld Expo, Brooks Hall, Booth #5418**.



ENGAGE COMMUNICATION, INC.
9053 Soquel Drive • Aptos CA 95003
408-688-1021 • Fax: 408-688-1421
AppleLink: D3362

Circle 77 on reader service card.

Ready when you are

Introducing HyperNet & HyperNet LTO. The network system that lets you expand and manage your network in seconds. Whether you are an AppleTalk or 10 Base-T user.

HyperNet LTO can be mounted in or on the wall. Creating networks that are accessible, manageable, indestructible and professional.

Call today to learn more about the HyperNet system.



Dealer & Academic pricing available upon request.

HyperNet connector \$19.95
HyperNet LTO \$79.95

N.A.C.

Network Applications & Computing
1705 Flickinger Ct., San Jose CA 95131
408 923-3983 or FAX 408 272-3114

Circle 51 on reader service card

CERTIFIED BY THE U.S. POSTAL SERVICE

IT'S FINALLY HERE!

**The Complete
Bulk Mailing System
for Macintosh!**

THE ULTIMATE POSTAGE REDUCING
SOFTWARE FOR MACINTOSH®

**WHY
PAY
HIGH
POSTAGE
RATES**

REDUCE YOUR MAILING COSTS BY 50%

FEATURES

- 4GB Database Storage Capability (Store Several Million Records)
- Carrier Route Coding (CR0032, RB32, HC32, B032)
- Zip+4 Coding (92649-0022)
- Bar Coding (Intelligent Mail Barcode)
- Address Parsing & Standardization "On The Fly" or Batch Processed
- Carrier Route Coding, Zip+4 & Bar Coding "On The Fly" or Batch Processed
- Automatic City & State Entry (Enter in the Zip Code and we produce the City/State)
- Automatic Zip Code Entry (Enter in the City and State and we produce the Zip Code)
- Presorting 1st, 2nd, 3rd Class Mail by: 5 Digit, Carrier Route or Zip+4
- Bulk Mail Forms are Electronically Generated Automatically.
- Detail line by line description on putting your mail together and packing it!
- Sack Tags and Postal reports are Automatically Generated!
- Information for the entire United States is provided on CD Rom!
- Information for localized mailings can be provided on Diskette!
- Fully Functional WORD PROCESSOR Built into every Package!
- Built in Labels & Customizable Label Generator
- Built in & Customizable Reports
- Instantaneous Search and Display
- Indexed Searching & Sorting (High-Speed Customizable & Multiple Searches and Sorts)
- Eradicate Exact, Phonetic or 'Soundex' Duplicates.
- Import any ASCII file with ANY Delimiter from any Database!
- Export an ASCII file with ANY Delimiter to be Imported into any Database!
- 'Built in Filters' to Convert a Database from 'One Delimitation to Another'!
- Multi-User Capabilities available.
- Works with any networking system on Macintosh®.



**SUPER
BULKMAILER+™**

CALL FOR YOUR FULLY FUNCTIONAL DEMO DISK

(800) 233-0555

Cost is \$10 - This will be refunded when you have purchased SuperBulkMailer™ 1.0

SEE US AT MACWORLD BOOTH #5543

Software Publishers of America, Inc.
9635 W. Sahara Ave., Suite 557
The Lakes, NV 89117-1817

Sales & Support: (800) 233-0555
FAX: (714) 849-2590

Circle 97 on reader service card.

\$500,000 + Trouble or...

A major aerospace company just paid \$500,000 to *one* employee stricken with cancer who was exposed to Extremely-Low Frequency Magnetic radiation (ELF). ELF penetrates the computer user 60+ times/second (1,728,000+ times/work day).

The EPA has concluded that ELF is a possible carcinogen. Doctors and scientists suspect ELF causes immune system injury, memory loss, leukemia, abnormal pregnancies, cataracts, blurred vision, miscarriages, stress, interference with the body's electromagnetic fields and more.

Thus, in 1990, Sweden enacted new safety guidelines (MPRII) for all computer monitors. In 1991, Apple Computer®, IBM®, NEC® and others quietly began introducing a few new monitors that meet MPRII guidelines.

Why put yourself at risk?

MacShield™

- Exceeds MPRII Standards - Reduces 85% ELF Radiation
- Absolutely the BEST Protection (Glare Shields cut ELF less than 15%)
- Totally Transparent - Dealer Installs Inside Your Current Equipment

Environmental Services & Products, 1931 Mapleton Ave., Boulder, CO 80304
International Order # for Companies and Individuals: (303) 442-2578, Fax: 442-0670
See MacShield™ and the only MPRII certified lab equipment at MacWorld Expo (Booth# 5934)

\$99 + Peace of Mind

Circle 141 on reader service card.

High Yield CDs.



Quantum Leap delivers great value.

Name your flavor. These discs are large libraries of great Macintosh shareware and public domain programs. Everything from artworks and music to utilities, games, fonts, ... the works. Plus the latest System 7 software for the newest Macintosh computers, and plenty of new System 7 compatible shareware and PD programs.

Giga-ROM™ 1.7 gigabytes of archived shareware and PD programs.

CD7™ Two discs with over a billion bytes of programs and resources.

Macademic™ The All-Educational Library for students and teachers.

Mega-ROM™ The original, most-affordable Mac shareware CD.

**Quantum Leap
TECHNOLOGIES**

Setting new standards in CD Software

Call toll free 1-800-762-2877 for the dealer nearest you.

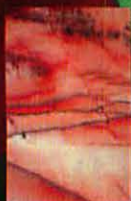
Phone: (305) 885-9985 • Fax: (305) 885-9986

Circle 136 on reader service card.

D'Pi
VISUAL VELOCITY



PICTURE. PERFECT.



Picture this: *FOLIO 1*™, a collection of 100 true high- and medium-resolution, *photographic* images instantly available for your desktop design applications.



No compromises either. Full-page bleed, magazine-quality, color images scanned with the latest technology. High- and medium-resolution images on CD-ROM. Medium-resolution images on diskettes.



Perfect for use as background images, textures, or design elements. Painstakingly photographed for maximum creative flexibility, *FOLIO 1* offers design standards such as marble, wood, fabric and metal, as well as progressive abstract images — all *without* use, modification or reproduction restrictions.



FOLIO 1 — picture perfect images for you. Call today for more information.

International orders call: 1-614-451-4372

1-800-238-DPIX (3749)

© 1991 D'Pi, D'Pi, the D'Pi logo, *FOLIO 1* and Visual Velocity are trademarks of D'Pi.

Put Our List On Your List



Our list can help you do the other things you have on your list. Such as buy a car. . . estimate social security. . . start the diet. . . check out investments. . .

Our list is the *Consumer Information Catalog*. It's free and more than 200 free and low-cost government booklets on employment, health, safety, nutrition, housing, Federal benefits, and lots of ways you can save money.

So to shorten your list, send for the free *Consumer Information Catalog*. It's the thing to do.

Just send us your name and address. Write:

**Consumer Information Center
Department LL
Pueblo, Colorado 81009**

A public service of this publication
and the Consumer Information Center
of the U.S. General Services Administration

Circle 261 on reader service card

How can I add a large screen to my Mac PowerBook?

ScuzzyGraph™...that's how!



ScuzzyGraph is the only display adapter that lets you instantly connect any monitor, monochrome or color, to any Mac, on your desktop or on the road.

- To install: Just Plug it in.
- Small and portable... Won't clutter your desktop
- Allows use of both screens.
- Moves easily from Mac to Mac

Also available for the Plus, SE, Classic, and Portable.

ScuzzyGraph... Mac's first SCSI display adapter
...and still the best.

For information call 1-800-365-AURA

Aura Systems, Inc. • P.O. Box 4576, Carlsbad, CA 92018 • (619) 438-7730



Circle 120 on reader service card.

Gang Busters.

The need to belong has always been a part of growing up. With the problems facing kids today and the growing number of single-parent families, that need has never been greater. As a result, gang membership is on the rise. The Boys & Girls Club gives kids the support and motivation they need to avoid gangs. The Club provides them with a sense of belonging and a sense of accomplishment. Please give to the Boys & Girls Club. The one "gang" worth joining.



BOYS & GIRLS CLUB

The Club that beats the streets.

Jackpot.



The Treasure Chest of Utilities™

Why wait for overnight delivery when all the best utilities for your Macintosh are now on a CDROM?

The new Treasure Chest Of Utilities™ from Quantum Leap offers you a revolutionary, simple way to evaluate and purchase your favorite programs on demand. Instantly. What could be easier?

The Treasure Chest Software Series is your key to unlocking a wealth of great Macintosh software.

Quantum Leap
TECHNOLOGIES

Setting new standards in CD Software

Call toll free 1-800-762-2877 for the dealer nearest you.

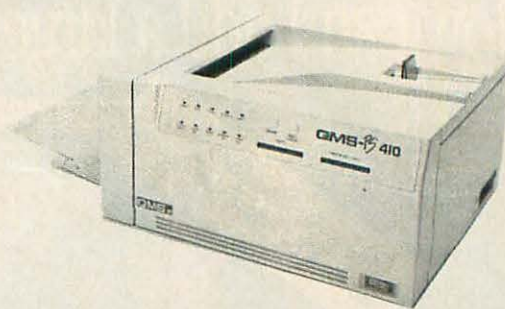
Phone: (305) 885-9985 • Fax: (305) 885-9986

Circle 137 on reader service card.

LOWEST PRICES HERE



Microtek 600 ZS
\$1369



QMS PS410
\$1699

SYSTEMS

	Price
Mac LC 2/40	1720
Mac IIfx - 5 meg	4179
Mac IIfx - 5 meg	2950
Mac IIfx - 5/105 (Quantum)	3359
Mac IIsi - 3/40	2625
Mac Portable 2/40	2650
Mac Portable 4/40	2880
Extended Keyboard	175
Quadra System	Call
Power books	Call

MONITORS

IKegami	
CT20 Color Trinitron	
& CT 2010 Mono	1845/825
CT20 w/8 Bit Card	2399
CT20 w/24 Bit Card	3049

Radius

19" Color Display	2950
21" Color Display	3125

Color Pivot

Color Pivot Interface	515
------------------------------	------------

II, LC, IIsi, SE, SE/30

Full Page System for Classic	825
Full Page System for LC	885
Full Page System for SE	825
Pivot Display for Built-in Video	729
Two Page Display 19"	959
Two Page Display 21"	1230
Two Page Display Interface	399
SE, SE/30, II, IIsi	
Precision 8 interface	515
Precision 24x	1700
Precision 8x	799

Radius

Rocket Accelerator	1700
--------------------	------

Apple

Apple 13" Highres	649
-------------------	-----

Seiko

Seiko CM-1445	569
---------------	-----

SuperMac

Platinum 19" Display	964
----------------------	-----

Platinum Two-Page Display	1239
---------------------------	------

Super Match 19" Color	1929
-----------------------	------

Super Match 21"	
-----------------	--

Two-Page Color Display	3031
------------------------	------

Trinitron 16" Display	1860
-----------------------	------

Dual-Mode Trinitron 19"	2893
-------------------------	------

Thunder/8	1259
-----------	------

Thunder/24	3299
------------	------

Spectrum 8.24 PDQ	899
-------------------	-----

Magnavox

14" Color Monitor	499
-------------------	-----

DRIVES

	Ext.	Internal
--	------	----------

Quantum 105 Pro	469	369
-----------------	-----	-----

Quantum 210 Pro	835	710
-----------------	-----	-----

Maxtor 120		399
------------	--	-----

Maxtor 213		659
------------	--	-----

Maxtor 340		1099
------------	--	------

Syquest 44MB		519
--------------	--	-----

Syquest 88MB		879
--------------	--	-----

Internal Kit		29
--------------	--	----

Syquest 44MB cart.		75
--------------------	--	----

SOFTWARE

Microsoft Word	269
----------------	-----

Microsoft Excell	309
------------------	-----

Aldus Pagemaker	497
-----------------	-----

SOFTWARE (cont.)

Caere Omnipage	49
----------------	----

Adobe Photoshop 2.0	51
---------------------	----

Quark Express	52
---------------	----

Adobe Streamline	9
------------------	---

PRINTERS

Microtek TrueLaser	1399
---------------------------	-------------

TI Microlaser PS35	151
--------------------	-----

TI Microlaser PS17	121
--------------------	-----

HP Deskwriter	43
---------------	----

HP Deskwriter Color	73
----------------------------	-----------

QMS PS410	1699
------------------	-------------

Qume Crystal Print	
--------------------	--

Publisher II	211
--------------	-----

NEC Mod 90	157
------------	-----

Crystal Print Mac Publisher	168
-----------------------------	-----

HP Deskwriter Ink Cartridge	18
-----------------------------	----

Appletalk Connectors (Each)	25
-----------------------------	----

New Apple Laserwriters	Call
------------------------	------

SCANNERS

Logitech ScanMan 32	279
---------------------	-----

Microtek 600ZS w/Photoshop	1369
----------------------------	------

Microtek 1850S Slide	1895
-----------------------------	-------------

Scanner

Caere Typist	420
--------------	-----

MODEMS

Zoom

FX9624 Plus 2400 BPS	139
----------------------	-----

Modem MX 2400S w/SendFax	
--------------------------	--

9600 BPS	105
----------	-----

v.32 Turbo w/v.42bis	
----------------------	--

w/MNP software	445
----------------	-----

Dove Fax Modem 9624+	295
----------------------	-----

Printer Connection



(714) 758-8832

FAX (714) 635-1752

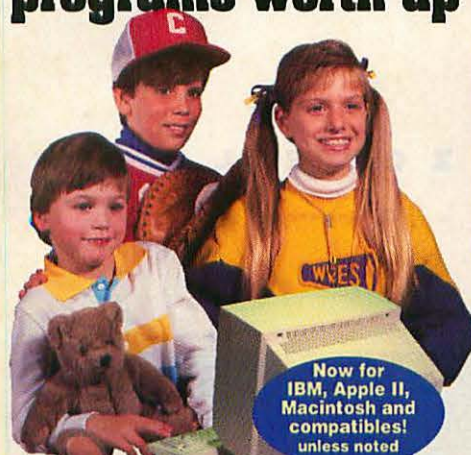


Overnight and Federal Express Shipping Available

Take **your choice** of these popular children's computer software programs worth up to \$59.95...

FOR JUST **\$9.95!**

Plus shipping and handling, with membership.



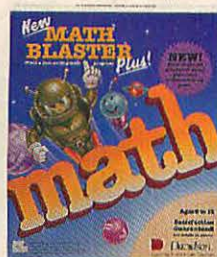
Now for IBM, Apple II, Macintosh and compatibles! unless noted



Where in the U.S.A. is Carmen Sandiego?
Regular Price: \$49.95
Winner, Outstanding Software Award. Learn hundreds of U.S. facts!



Where in Time is Carmen Sandiego?
Regular Price: \$49.95
Travel through time to capture Carmen and her villainous gang!



New Math Blaster Plus!
Regular Price: \$49.95
World's best-selling math program has fun "blasternaut" game!



Super Solvers Outnumbered!
Regular Price: \$49.95
This highly-recommended program develops math, problem-solving and other skills. Available for IBM, Macintosh, and compatibles only.



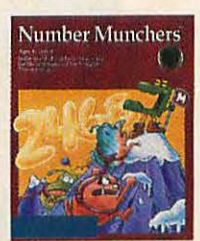
Mavis Beacon Teaches Typing!
Regular Price: \$49.95
Winner, Best Home Learning Award! Fun typing skills for all ages.



The Oregon Trail!
Regular Price: \$49.95
Travel with a pioneer family across the 19th century wilderness, learning how to survive.



The New Print Shop!
Regular Price: \$59.95
The most popular graphics software in history. Print your own cards, banners and signs. Printer required.



Number Munchers!
Regular Price: \$49.95
A "tasty" way to practice math. Fast-paced fun builds solid math skills. Winner, Parent's Choice Award.



Stepping Stones I & II:
Regular Price: \$49.95
From early reading to addition, spelling and vocabulary. Colorful graphics.

SOFTWARE SELECTION GUIDE

ages 3-7
ages 7-10
ages 10-13+

Watch your children laugh and learn...with software that's fun!

You've got the children. You've got the computer. Now you can bring the two together and turn leisure time into learning time with software that's fun!

The Learning Adventure Computer Club takes the work out of software selection for you. We review hundreds of computer programs for youngsters—invite children like yours to test them—then select only the ones that combine active fun with measurable learning in:

- MATH • SOCIAL SCIENCE AND GEOGRAPHY • SCIENCE
- LANGUAGE ARTS AND READING • CRITICAL THINKING SKILLS
- AND MORE IMPORTANT SKILLS!

Software Geared to Your Child's Age and Interests

To find out which programs are best for your child, check the colored square by each program: they're keyed in three age groups. Blue programs introduce your 3-7 year old to the computer with activities that arouse their curiosity...capture their imagination...and instill a lifelong love of learning. Red programs turn the Three R's into rip-roaring adventures for 7-10 year olds with programs developed to supplement their education and turn their weaknesses into strengths. Green programs stretch the minds of 10-13+ year olds with sophisticated software that make academic challenges fun and rewarding!

How the Club Operates

Try your first computer program FREE for 15 days at no risk or obligation. Just select the software package of your choice, complete the coupon at right and mail it today!

We'll send you the program you select. If you're pleased with it, you'll pay just \$9.95—the Charter Member's price—plus shipping and handling, a savings of up to \$50.00 off the retail price.

Then about every four weeks (13 times a year) you'll receive our special Club Newsletter with details about the next selection for your child. To receive the main selection, you need to do nothing—it will be sent automatically. If you wish to order an alternate selection, or wish no selection at all, simply return the card we provide to tell us your choice. You will always have at least 10 days to decide.

Enjoy a 15-Day Free Trial

What's more, you have 15 days to preview your introductory software and return it if not 100% satisfied. As a member, your only commitment is to purchase three additional selections in the next year at regular club prices. You may cancel your membership anytime thereafter. You have absolutely nothing to lose, and a whole new world of fun and learning to gain for your children. So don't wait.

Mail the coupon today!

Circle 121 on reader service card

Exciting Newsletter...FREE!

Charter members receive the Learning Adventure Computer Club Parents Newsletter FREE. Featuring a host of recommended software for children 3-13+



Mail to: **Learning Adventure™ Computer Club**
925 Oak Street, Scranton, PA 18515, Dept. AFYA12

YES! Please send me the program I have indicated below to preview for 15 days at no risk or obligation. I may return the program after 15 days and have no further obligation. If I am pleased with the program, I'll pay for it at the special new member price of only \$9.95 plus shipping and handling, and enroll as a new member under the terms outlined on this page. As a new member, I need to buy just 3 more selections at regular club prices in the next year and may cancel any time thereafter.

Name _____
Address _____
City _____ State _____ Zip _____
Telephone () _____

Name of Program
(Print in box)

- AGE of child (check one): ☐ 3-7 ☐ 7-10 ☐ 10-13+
- Computer you own and disk size required (check one):
☐ IBM/Tandy & compatibles with 5.25" disk drive
☐ IBM/Tandy & compatibles with 3.5" disk drive
☐ Apple II family & compatibles with 5.25" disk drive
☐ Macintosh & compatibles with 3.5" disk drive

3. Child's name _____
Child's birthdate: Month _____ Day _____ Year _____

4. Please check below if you have a:
☐ Printer ☐ Modem ☐ Color Monitor

5. Parent's signature _____
We reserve the right to request additional information or reject any application or cancel any membership. Sales tax will be added in PA. We'll send you details of the club's operation with your enrollment shipment and you have a 15-day no-obligation privilege to decide if you wish to continue as a member.

Profile

TRACKING OZONE LOSS

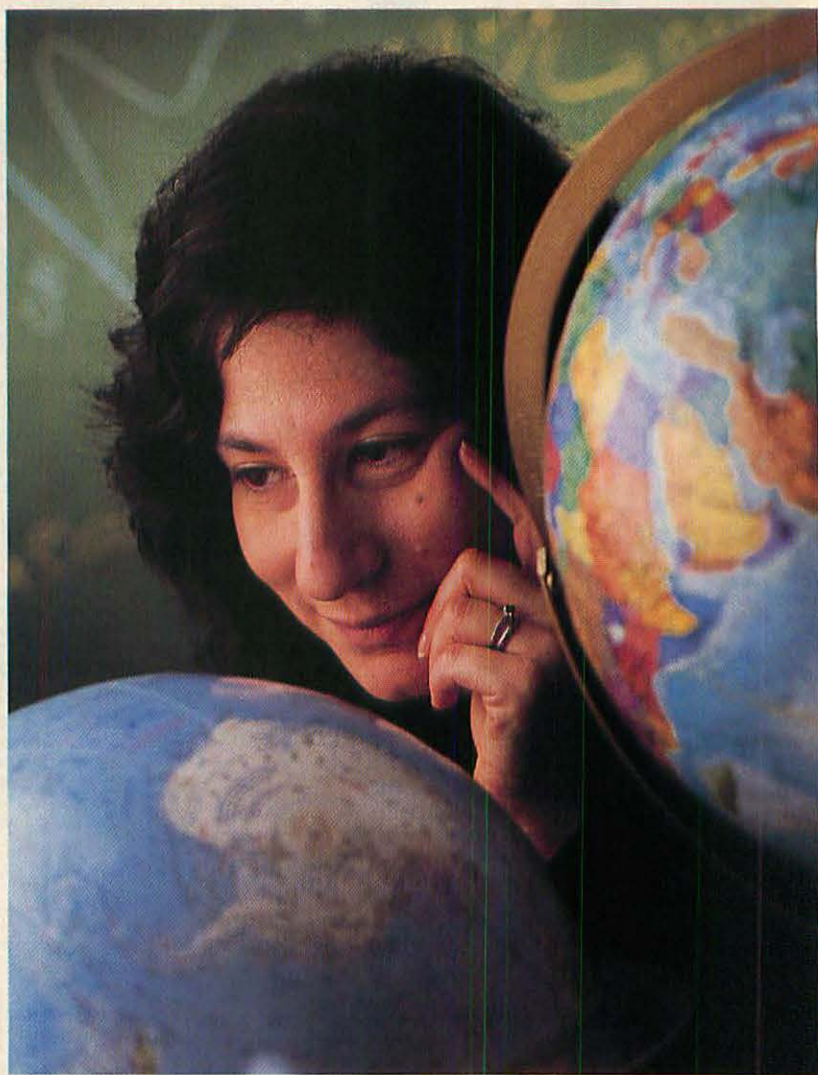
SUSAN SOLOMON KEEPS A CLOSE eye on the Antarctic. In 1986 she led the first U.S. study of Antarctica to examine ozone depletion. Ozone losses had been noted there the year before, an alarming discovery because ozone in the stratosphere protects Earth from the Sun's ultraviolet radiation.

Solomon was among the first researchers to discover the mechanism for ozone depletion, a chemical reaction between ice particles in clouds and chlorine from chlorofluorocarbons used primarily as solvents and in refrigeration. The Chicago native heads the Middle Atmosphere Section at the Aeronomy Laboratory of the National Oceanic and Atmospheric Administration (NOAA) in Boulder, Colorado.

"I use my Mac extensively; it's part of my life," says the award-winning scientist, who specializes in the photochemistry of the stratosphere. The NOAA uses Macs to collect, analyze, and share data. Four Macs (two II's and two Ix's) are being connected directly to spectrometers to collect light samples that give scientists information about ozone loss. One Mac is already set up in Antarctica; the others are earmarked for Hawaii, Colorado, and New Zealand. Once data is collected and analyzed using a custom program, Solomon uses Igor, from Wave Metrics, and CA-Cricket Graph to plot results. For serious modeling, she uses her Mac as a front end to a Cray supercomputer, later studying the results on her own machine.

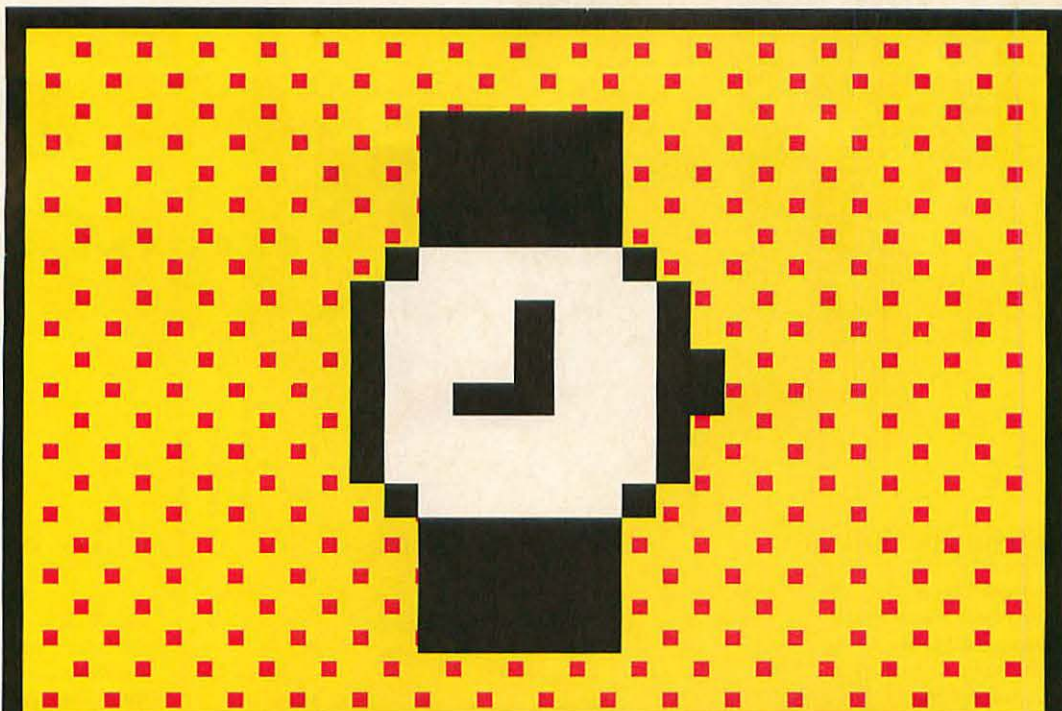
The urgency of the ozone issue is undeniable. Last October a United Nations study reported that ozone thinning isn't limited to the Antarctic nor to winter months. But research is paying off. Partly as a result of Solomon's work, more than 70 nations have agreed to lower the use of ozone-destroying chemicals by the year 2000.

—DEBORAH BRANSCUM



Susan Solomon, Ph.D.

NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
BOULDER, COLORADO



WHAT DO PEOPLE SEE IN OTHER CD-ROM DRIVES?

That pesky little wristwatch.

Choose another CD-ROM drive and you'll see a lot more of him. But choose the Allegro Drive from Optical Access and you'll lose the wait.

That's because our drives come with OAI SuperCache™ software that greatly increases Allegro's speed.

Put in a disc, and SuperCache reads essential parts of its directory and desktop files and stores them in RAM. With those in memory, Allegro can then spend most of its time accessing files, instead of looking for them.

Windows open instantly. Menus pull right down.

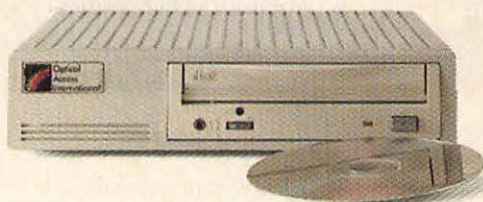
And in addition to speed, Allegro offers other pluses. Like a totally sealed drive and access door to keep dust at bay. Twin SCSI ports. A reliable, high performance Toshiba drive mechanism. And dual RCA jacks for playing audio discs.

Just what you'd expect from the first company in history to connect a CD-ROM to a Mac.

Get the whole story by calling **1-800-433-5133** or (617) 937-3910.

Or write to us at 800 West Cummings Park, Suite 2050, Woburn, MA 01801.

And stop looking at your watch.



SuperCache is a trademark of Optical Access International

Circle 56 on reader service card

Best-Sellers

FEBRUARY 1992

Months on chart
▼ Last month
▼ This month

Business Software

72	1	1	Microsoft Excel <i>Microsoft Corporation</i>
81	2	2	Microsoft Word <i>Microsoft Corporation</i>
3	3	3	Microsoft Office <i>Microsoft Corporation</i>
59	4	4	Microsoft Works <i>Microsoft Corporation</i>
33	5	5	WordPerfect for the Macintosh <i>WordPerfect Corporation</i>
57	9	6	MacDraw II <i>Claris Corporation</i>
1	—	7	Calendar Creator <i>Power Up Software Corporation</i>
68	6	8	Aldus PageMaker <i>Aldus Corporation</i>
19	14	9	Quicken <i>Intuit</i>
33	12	10	FileMaker Pro <i>Claris Corporation</i>
2	8	11	Aldus Persuasion <i>Aldus Corporation</i>
15	7	12	MacProject <i>Claris Corporation</i>
57	11	13	MacWrite II <i>Claris Corporation</i>
16	—	14	Aldus FreeHand <i>Aldus Corporation</i>
3	10	15	Microsoft PowerPoint <i>Microsoft Corporation</i>

Education Software

48	1	1	Reader Rabbit <i>The Learning Company</i>
15	3	2	Where in Time Is Carmen Sandiego? <i>Broderbund Software</i>
34	4	3	Where in the World Is Carmen Sandiego? <i>Broderbund Software</i>
20	—	4	Where in the USA Is Carmen Sandiego? <i>Broderbund Software</i>
59	2	5	Math Blaster <i>Davidson & Associates</i>

Months on chart
▼ Last month
▼ This month

Entertainment Software

46	1	1	Microsoft Flight Simulator <i>Microsoft Corporation</i>
11	2	2	SimEarth <i>Maxis</i>
25	—	3	SimCity <i>Maxis</i>
3	3	4	Bridge <i>Artworx</i>
2	4	5	Oids <i>FTL Games</i>

Network/Data Communications

13	2	1	MacLink Plus <i>DataViz</i>
14	4	2	White Knight <i>FreeSoft</i>
60	5	3	TOPS <i>Sitka Corporation</i>
15	—	4	Timbuktu <i>Farallon Computing</i>
8	—	5	Smartcom II <i>Hayes Microcomputer Products</i>

Add-In Boards

1	—	1	Macintosh IIci Cache Card <i>Apple Computer</i>
10	1	2	Macintosh IIsi NuBus Adapter Card <i>Apple Computer</i>
14	2	3	Macintosh Display Card 8•24 <i>Apple Computer</i>
16	3	4	Radius TPD Interface <i>Radius</i>
3	5	5	Apple IIe Card Macintosh LC <i>Apple Computer</i>

Months on chart
▼ Last month
▼ This month

Utility Software

9	1	1	After Dark <i>Berkeley Systems</i>
16	2	2	The Norton Utilities for the Macintosh <i>Symantec Corporation</i>
1	—	3	More After Dark <i>Berkeley Systems</i>
2	4	4	Suitcase II <i>Fifth Generation Systems</i>
10	5	5	Virex <i>Microcom</i>

The AmCoEx Index of Used Mac Prices

Machine/ RAM/Hard Drive	Average Sale Price	Monthly Change
Mac Plus/1MB/none	\$550	+75
Mac Plus/2MB/20MB	\$800	-25
Mac SE/2MB/20MB	\$1000	+25
Mac Portable/1MB/40MB	\$1600	-50
Mac Classic/2MB/40MB	\$1075	+50
Mac SE/30/2MB/40MB	\$2150	+350
Mac II/4MB/40MB	\$1950	-100
Mac IIcx/4MB/40MB	\$1950	-100
Mac IIci/4MB/40MB	\$1950	-100
Mac IIfx/4MB/80MB	\$4500	-200
Apple 12-inch B&W display/board	\$300	-25
Apple 13-inch RGB display/board	\$700	0
LaserWriter Plus	\$1300	-100
LaserWriter IINT	\$1900	0

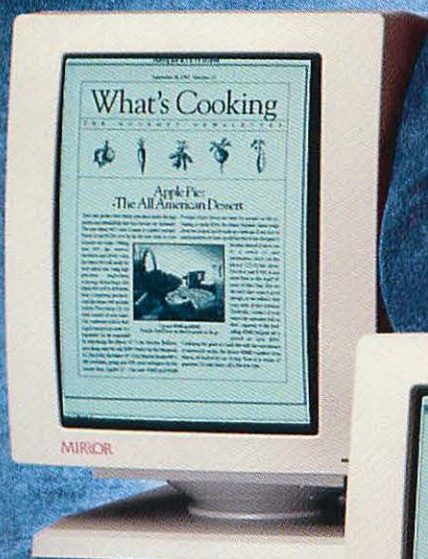
Index is provided by the American Computer Exchange of Atlanta, Georgia. It reflects sales during week of November 22. Configurations include keyboard and exclude monitor and display board for noncompact models.

Source: Exclusive Audits & Surveys research from more than 250 Macintosh retailers and selected mail-order vendors. Covers sales during October 1991.

"Don Says Mirror's New Monochrome Displays Are Clearly Their Best Product..."

Don Rittner, President of M.E.C.C.A.
Editor of MUG News Service

\$449 for built in video
(call for other options).



19" \$799 with card.

21" \$999 with card.



es He Know?"

issue of *MacUser* magazine. Featuring world class Trinitron quality so your most critical projects look flawless, the ProViews are still affordably priced.

"The ProView can handle my most demanding applications with ease; and best of all, I can afford it."

— Michael Levy

The Mirror color scanner, according to Nancy, is a remarkable product; 600 dpi 24-bit scanning for only \$1299. It has more features and higher quality than competing models, yet is priced far less.

"This would be a good scanner for \$2000; for \$1299 it's unbelievable."

— Nancy M. Benz

In December 1991 *MacUser* gave this scanner 4

Nancy M. Benz, member



mice, saying, "the quality of the hardware is excellent." and it "produced the best images."

If you need to get color or gray-scale images into your work, the Mirror color scanner is for you.



"Mirror's 88MB SyQuest drive solved my growing storage problem."

— John H. Galligan

Mirror offers hard drives from 30 MB to 1 Gigabyte, and each one has the quality features that won John over:

top quality drive mechanisms, rugged steel chassis, external termination and SCSI address switch, convenience outlets and a two year warranty.

Whether you need a zero-

HARD DRIVES	EXT.	INT.
45MB	\$329	\$269
50MB(Q)	\$349	\$289
80MB	\$369	\$299
105MB(Q)	\$499	\$439
210MB(Q)	\$799	\$739
45MB Rem.*	\$499	N/A
88MB Rem.*	\$649	N/A
CD ROM	\$599	N/A

Call for other capacities.

*Price Includes one cartridge

John H. Galligan, member



footprint drive, a super compact portable drive, or an 88 or 45 MB Syquest drive, Mirror's got the right stuff.

Tough customers all over choose Mirror products for quality, performance and value. We offer a complete line of Macintosh peripherals including hard drives, displays, scanners, printers, CD-ROM drives,



and tape back-up units.

Call for our free catalog to read what the experts say about Mirror peripherals. Superior products, superior value, all backed by our famous 30-day, "love it or return it" guarantee.*

MIRROR

To Order Direct,
Call 1-800-654-5294

Media:1001



Technical Support Hotline: (612) 633-2105
Telephone: (612) 633-4450 Fax: (612) 633-3136
Address: 2644 Patton Road, Roseville, MN 55113

All prices subject to change.

*You pay shipping costs.

® Trinitron is registered trademark of Sony Corporation

†Available 2/1/92

Circle 125 on reader service card

...But What Do

At Mirror, we build quality, reliability and value into every single product so we've got power users all over the country talking about them. It's the kind of talk we love to hear.

"Unarguably the best products in the Mirror line."

— Don Rittner

Don Rittner, president of M.E.C.C.A., thinks that monochrome monitors are Mirror's best products. But members of his own users' group disagree.

It's possible that Don may be right. After all, we've just introduced a new 21" two-page[†] and a 15" full-page display. Use them with a built-in video port on some Macs or with a Mirror monochrome video card for a sharp, bright view of your work.

Stephen C. Frantz, Ph.D., member

The 19" two-page display comes with a monochrome video card for the SE, Classic, LC, SE/30, MacII or Quadra.

All three systems feature high-contrast, razor-sharp images, reduced VLF and ELF emissions, and built in ADB ports for reduced cable clutter.

Stephen Frantz prefers Mirror's color monitors because there's one for every need and budget. Like the 14" for example.



14" Color	\$399*
16" Trinitron	\$1399*
w/ 8-bit card	\$1799
20" Trinitron, 8-bit	\$2499
23" Trinitron, 24-bit	\$2999

* for built in video ports

"Mirror's 14" color is under 400 bucks, and it looks great."

— Stephen C. Frantz

It gives you large screen color for a monochrome price, 640 X 480 resolution for 56% more work-space than Apple's 12" monitor, and brilliant color from

Hilary Koppel, member

the built-in video port of your LC, IIsi, Ilci or Quadra.

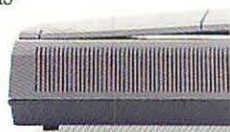
"Mirror's done it again. This is a real breakthrough, a 16" Trinitron for \$1399."

— Hilary Koppel

Stephen is not the only one excited about Mirror color systems. Hilary loves the 16" Trinitron. Designed for the pro who demands the highest quality, but can't justify the high cost, the Mirror 16" Display has 832 X 624 resolution for comfortable viewing of two-page layouts or large spreadsheets.

Use Mirror's 16" Trinitron with the built-in video port on IIsi, Ilci or Quadra, or our optional video card for any MacII.

If you need a no compromise two-page color display, Michael advises checking out the Mirror ProView.

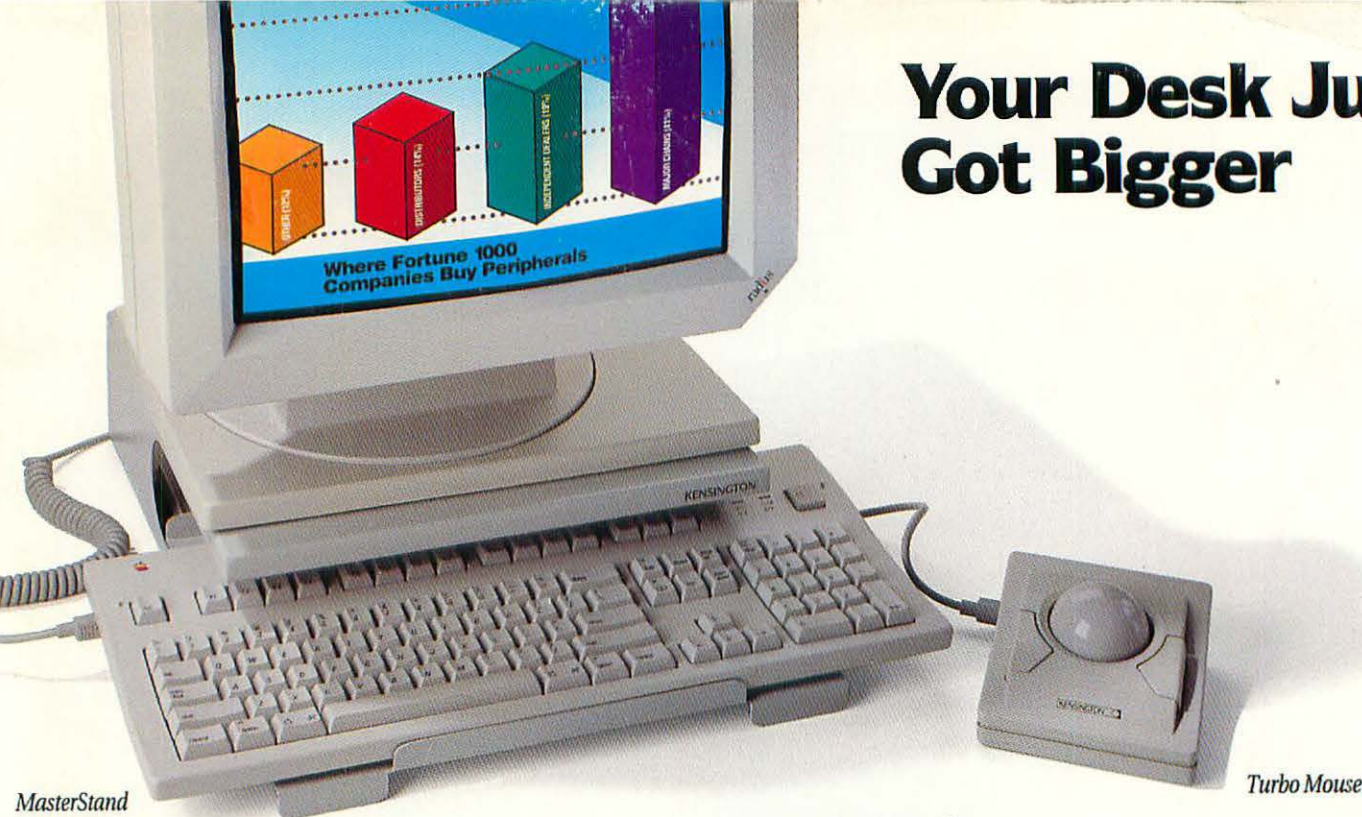


Available in 8-bit or 24-bit models, the ProView is "a real bargain" according to the May '91

Michael Levy, member



Your Desk Just Got Bigger



MasterStand

Turbo Mouse

Kensington introduces MasterStand and LaserStand to its complete line of space savers.

The more stuff we put on our desk the smaller it seems to get.

And with a CPU, keyboard, monitor, printer and mouse, there's hardly room left for anything else.

But don't give up. You can make your desk bigger with one, or a combination of space saving products from Kensington.

MasterStand™ saves space by letting you slide your keyboard underneath your Mac or large screen monitor. It even turns a narrow desk, credenza or file cabinet into a workstation by extending the keyboard eight inches.

Want to store all your LaserWriter® II supplies in one convenient place?

With LaserStand, there's room on one end for two reams of paper and up to 75 envelopes. The other end (not shown) holds two extra paper trays. And a convenient side compartment protects, organizes and hides printer cables.

Keyboard Shelf



LaserStand

For dot matrix printers, our Space Saving Printer Stand is the answer for maximum storage with a minimum footprint.



Space Saving Printer Stand

And our award winning Turbo Mouse® saves even more space with its superior trackball design.

Unlike many accessories, all Kensington products look like they belong to your Mac. The styling is complementary. The color identical. Even the same material is used.

For a free brochure on our complete line of space saving products, including Keyboard Shelf, Keyboard Slideaway, Maccessories® Tilt/Swivel and SuperBase®, call 800-535-4242. Outside the U.S. 415-572-2700.



MasterStand is a trademark and Keyboard Slideaway, Maccessories, Turbo Mouse and Kensington are registered trademarks of Kensington Microware Limited. Apple, Classic, LaserWriter and Macintosh are registered trademarks of Apple Computer Inc. All other registered and unregistered trademarks are the sole property of their respective owners. © 1991 Kensington Microware Limited. 9/91

KENSINGTON